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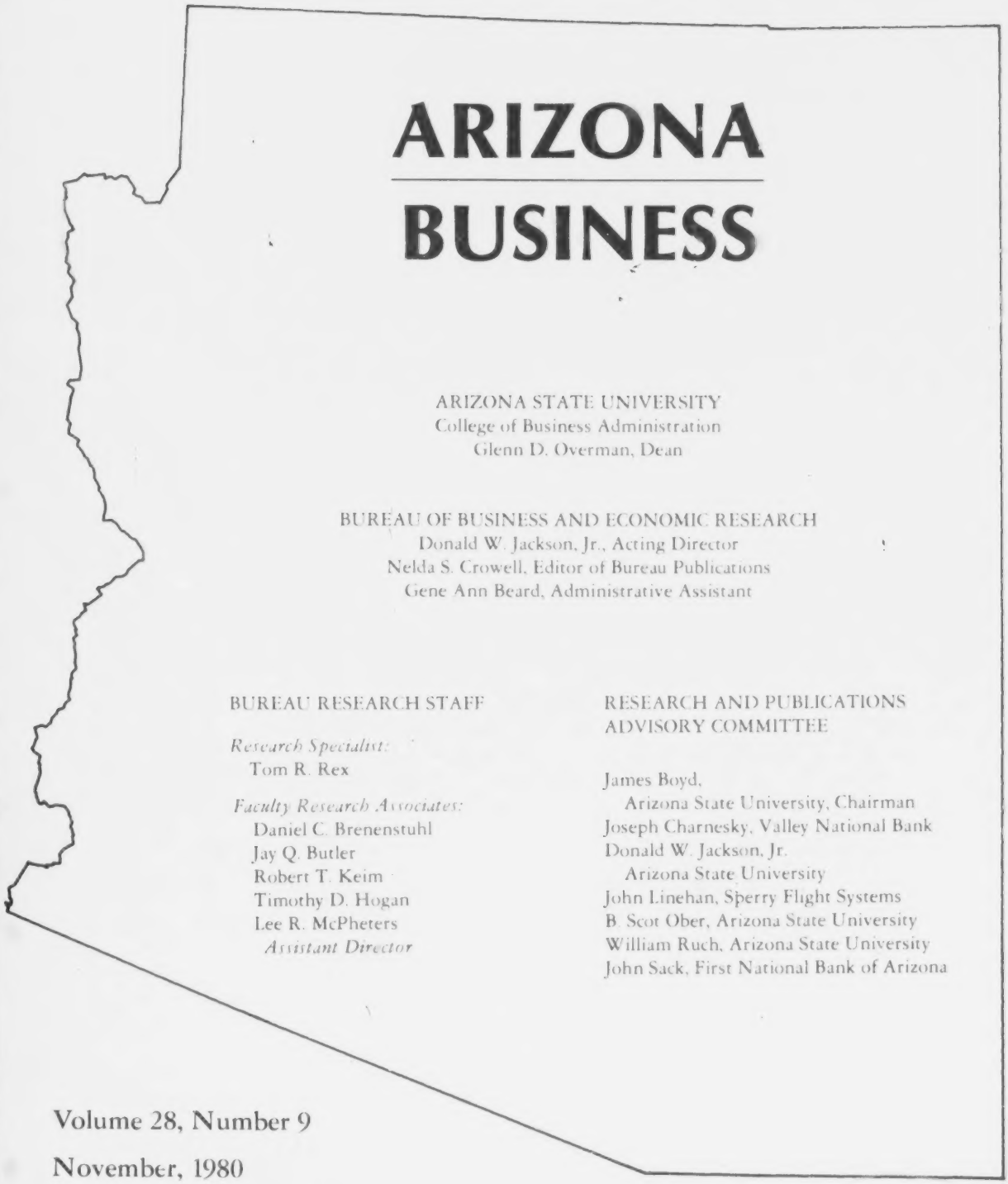

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Report to The Reader

Are we headed for another baby boom? Two Arizona State University faculty members think it is a possibility. In the article entitled "Birth Rate Trends: Implications for the Future," Dr. Stephen Happel and Dr. Timothy Hogan discuss the impact of small changes in average family size and explore several economic theories that explain the birth rate trends. Based on economic conditions, lifestyle changes, and natural cycles, the authors forecast a general increase both in total births and in the total fertility rate in the United States throughout the remainder of the twentieth century.

The second article, "Training and Development Talent in the Phoenix Metropolitan Area," reports the result of a survey of training professionals in the Phoenix area. The authors conclude that, "qualified professionals are available locally, and a national search may not be necessary to recruit people who can use effective techniques or teach important training skills."

• • •

"Regional Prospects for the 80s and 90s" is the theme of the Southwest Regional Seminar of the National Association of Business Economists scheduled for February 20-21 at the Marriott Hotel in Tucson.

The seminar will consider national and regional economic trends, human resources and productivity, regional resources and the environment, capital needs and availability, and U.S.-Mexican economic relations.

Speakers will include Walter Hoadley (Bank of America), Professor Lester Thurow (M.I.T.), John Boatwright (Exxon), Kathy Eickhoff (Townsend-Greenspan & Co.), Larry Kimbell (U.C.L.A.), Irwin Stelzer (National Economic Research Associates), Jack Pfister (Salt River Project), and Robert J. Eggert (Eggert Economic Enterprises, Inc.).

The seminar is sponsored by the Arizona Economic Roundtable and the College of Business and Public Administration of the University of Arizona.

Registration fee, including dinner and two luncheons, is $85. For details, contact:

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Birth Rate Trends: Implications for the Future

STEPHEN K. HAPPEL
TIMOTHY D. HOGAN

Population growth and the birth rate in particular, have been important in economic discussions since Thomas Malthus' provocative "Essay on the Principle of Population" in 1798.[1] However, today, with the low and relatively stable mortality in the industrialized world, economic demographers see the birth rate as the key for understanding population change and, consequently, the effects of demographic conditions in high income societies. They point out that current birth rates have an immediate impact through the types of goods and services purchased and female labor force decisions. They also point out that the ramifications of the current birth rate will be felt for decades to come as people grow older, enter into jobs and form households, and then retire.

For business managers, school officials, government planners, and other decision makers, knowledge of birth rate trends may be a vital element in their planning process. Corporations can improve decisions such as the extent of the product line and where to locate production facilities. At the local level, construction firms can anticipate demands for housing and shopping centers, whereas school officials can utilize facilities more efficiently in the long run. In addition, government officials can plan for demands on parks and other public services, project changes in revenue, and can consider the future status of programs such as Social Security.

During the post-World War II baby boom, the United States birth rate rose unexpectedly and remained at a high plateau until the end of the 1950s. After 1960, however, the birth rate in America dropped sharply, and by the mid-1970s, had declined to historically low levels—substantially below the level necessary for long-run replacement of the population—an average of less than two children for each couple.

The purpose of this article is to review these population trends in Arizona and the United States, and to discuss projected birth rate trends in Arizona and the United States. In the first section, projections from the United States Census Bureau demonstrate how a small change in average completed family size can have a large impact on a society after only a few decades. In the second section, the Arizona birth rate is compared to that of the United States. In the last section several economic theories are presented that provide explanations for the trends. The statistics and theories are then used as a basis for speculation about the birth rate for the remainder of the century. In particular, this article considers the controversial issue of whether another

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By the 1970s, the birth rate in Arizona and in the United States had declined to an average family size of less than two children. However, an upswing could occur during the remainder of the century with implications for business, government, and education.

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major upsurge in birth rate is likely to occur in the next five to ten years.

THE POTENTIAL IMPACT OF CHANGES IN TODAY'S BIRTH RATE

To illustrate the profound effects that changes in the birth rate can have upon a society, a variety of demographic statistics are drawn from three alternative projections of United States population. The projections, produced by the Census Bureau, were based on identical assumptions with respect to mortality and immigration. They differed only in their assumptions concerning future birth rates, expressed in terms of average completed family size:[2] Series I—2.7 children per woman; Series II—2.1 children; and Series III—1.7 children. Putting these family size assumptions into perspective, United States birth rate levels in the middle to late 1970s have been consistent with a completed family size of about 1.7 children. Thus, the Series III assumption implies that the future birth rate will remain at current low levels. The Series II projection is based upon an assumption that the United States birth rate will gradually rise to replacement level in which each couple will just be replacing itself by having two children (taking into account minimal levels of mortality). The long-run result would be zero population growth in the United States. Finally, the Series I projection implies the resurgence of the United States birth rate, which some demographers believe is a possibility within the next two decades.[3] Table 1 presents information (based upon these three alternative population projections) concerning future trends in total population growth, growth of the school age population, and the relative proportion of the population that would be of retirement age in 1985, 1990, 1995, 2000, and 2025.

The statistics relating to growth of the total population show the impact of an increase in average family size of one child on the United States population after only twenty-two years. With a continuation of a current low birth rate, the total United States population would be expected to grow to almost 244 million by the year 2000, an increase of 11.6 percent, while the Series I projection implies a 29.4 percent increase to over 282 million by the end of the twentieth century. Further in the future, such differences would produce even more divergent results—the Series I population would be almost one and one-half times as large as that implied by the Series III projection (373 million versus 252 million) by the year 2025.

One example of the way in which differences in the rate of population growth can have significant social and economic effects, can be seen in the portion of Table 1 relating to school age population. The Series I projection (2.7 children) implies that substantial growth in the school age population is projected. On the other hand, a continuation of the current birth rate (Series III—1.7 children) would result in a decline in the school age population. Such differences could, of course, have profound effects upon the demand for teachers, expenditures for school construction, not to mention textbooks, toys and games along with many other aspects of American society.

The birth rate also affects the age structure of the population. Although it may be surprising to some, the decline in the United States birth rate has been much more important than increased longevity as a cause of the growing burden of the Social Security system. The data in Table 1 on future trends in the proportion of elderly show that the birth rate is also a determinant of the future status of the Social Security system. If current levels were to persist indefinitely, the data show that the proportion of people age sixty-five and over will grow

TABLE 1

DEMOGRAPHIC TRENDS ASSOCIATED WITH THREE ALTERNATE PROJECTIONS OF FUTURE POPULATION GROWTH IN THE UNITED STATES

	1978	1985	1990	1995	2000	2025
Total United States Population (millions)						
Series I		238.9	254.7	269.4	282.8	373.1
Series II	218.5	232.9	243.5	252.8	260.4	295.7
Series III		228.9	236.3	242.0	243.9	251.9
Percent Population Increase Since 1978						
Series I		9.3	16.6	23.3	29.4	70.8
Series II		6.6	11.4	15.7	19.2	35.3
Series III		4.8	8.1	10.8	11.6	15.3
Population in School Ages (5-17) (millions)						
Series I		45.4	51.4	60.6	64.4	85.7
Series II	48.0	43.5	45.3	49.6	51.1	53.0
Series III		42.1	41.5	42.5	42.7	36.7
Percentage of Total Population 65 Years and Over						
Series I		11.4	11.7	11.7	11.3	13.6
Series II	11.0	11.7	12.2	12.4	12.2	17.2
Series III		11.9	12.6	13.0	12.9	20.2

Note: Series I projections assume an average completed family size of 2.7 children per woman; Series II — 2.1 children; Series III — 1.7 children.

Source: 1978 population figures from the Bureau of the Census, *1979 U.S. Statistical Abstract;* other figures computed from population forecasts in Bureau of the Census, *Current Population Reports*, Series P-25, No. 704 (July 1977), "Projections of the Population of the United States 1977-2050."

from 11 percent to almost 13 percent by the year 2000, an increase of 17 percent, and that even a substantial resurgence of the birth rate (Series I) would merely keep the proportion from growing more than slightly over the next twenty years. The projected figures for the year 2025 demonstrate the vital nature of future birth rate trends. By that year, the proportion of the population sixty-five and over will almost double if current birth rates persist, producing a tremendous Social Security burden.

ARIZONA AND UNITED STATES BIRTH RATES: 1950-1979

Throughout the first half of this century, a long-term decline in the birth rate occurred in both Arizona and the nation. The average family size in the United States had dropped from about four children in the early 1900s to about 2.5 children in 1940. After World War II, the birth rate rose sharply—with average family size of about 3.5 children—and it remained at high levels for most of the 1950s. By 1960, however, the birth rate in both Arizona and the United States had begun to decline again, and by the 1970s, the birth rate in the state and in the nation had reached an average family size of less than two children.

Crude Birth Rates

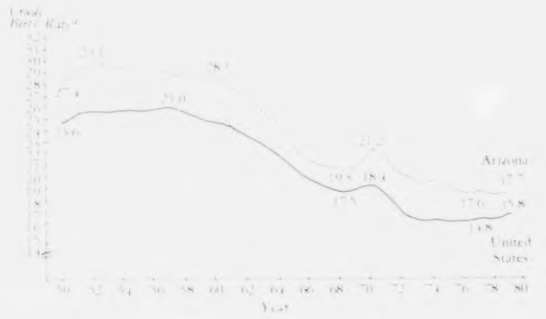
To allow more detailed examination of these trends, Figure I traces the movement of the crude birth rate in Arizona and the United States from 1950 to 1979. The crude birth rate (CBR), which is the simplest and most commonly used birth rate figure, is computed by dividing the total number of live births in a given year by the midyear total population figure. Thus, it provides adjustment in birth statistics by variations in population size by expressing fertility in terms of a per capita measure. Traditionally, crude birth rates are expressed in terms of the number of births per 1,000 population, rather than births per person.

In Figure I, it is evident that the two birth rate series have generally moved in very similar patterns. After relatively stable and high birth rates during the 1950s, both Arizona and United States birth rates declined substantially during the next decade, with a total decline of 31 percent in Arizona and 26 percent for the nation from 1960 to 1968—the year in which the lowest birth rate of the 1960s occurred. After small increases in 1969-1970, the decline resumed, and the downward trend bottomed out in the mid-1970s at crude birth rates of approximately 17 to 18 per 1,000 population in Arizona and 15 births per 1,000 in the United States.

It is also evident that the birth rate patterns in Arizona have differed in some respects from the national patterns. Most importantly, birth rates in Arizona have been substantially higher throughout the 1950-1979 period. Similarly, the cyclical movements in the rates around the long-term trend are also more pronounced in the Arizona series compared with United States rates, as for example in the upturns in the Arizona crude birth rate in 1960, 1969-1970, and 1974.

FIGURE I

CRUDE BIRTH RATES IN ARIZONA AND THE UNITED STATES, 1950-1979



*Expressed in births per 1,000 population

Source: Arizona data from Arizona Department of Health Services, *Arizona Vital and Health Statistics*. United States data from U.S. Department of Health, Education and Welfare, *Vital Statistics of the United States, Volume I — Natality*, 1977 and *Monthly Vital Statistics Report*, various issues.

Total Fertility Rates

Although the crude birth rate is the most widely used measure, it has two drawbacks that make its use undesirable for precise analysis of birth rate trends. First, the crude birth rate's denominator is total population, even though only women in the child-bearing ages are the actual population who can be affected. Thus, computed birth rates could vary substantially because of differences in age and sex structures of the total population, even though the number of births occurring to each woman of child-bearing age were exactly the same. Second, the crude birth rate is not easily converted to a scale that allows comparison in terms of equivalent average family size. Because of such shortcomings, demographers have developed more sophisticated measures. The most popular of these refined measures is

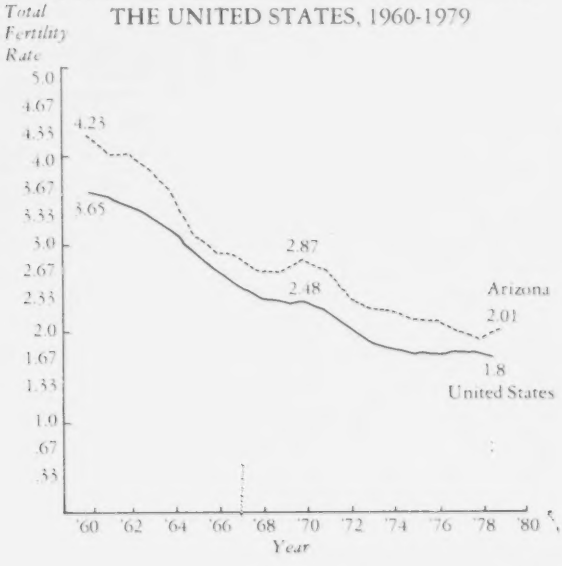
the total fertility rate (TFR), which by its construction, corrects for both of the disadvantages of the crude birth rate mentioned above.

The *total fertility rate* is defined as the completed number of children a woman would have if she were subject to the present fertility rates at each specific age between fifteen and forty-four. Thus it is defined for women in childbearing ages, and it eliminates age structure effects by weighting each age - specific rate the same. The TFR measures the fertility of women of childbearing age during a given year, whereas the completed fertility rate measures the actual number of children born to women during the entire childbearing period.

Figure II shows the comparison between the TFR in Arizona and the United States since 1960; the findings are much the same as the evidence provided by the crude birth rate in Figure II. The two rates generally move in concert, but the upturns in the Arizona TFR are stronger than corresponding United States increases. Also, the Arizona rate is somewhat more volatile since 1973 and most importantly, the Arizona TFR is greater than the United States rate for every year listed. Thus, one might conclude that the desire for children has indeed been stronger in Arizona than the United States as a whole.

FIGURE II

TOTAL FERTILITY RATES IN ARIZONA AND THE UNITED STATES, 1960-1979



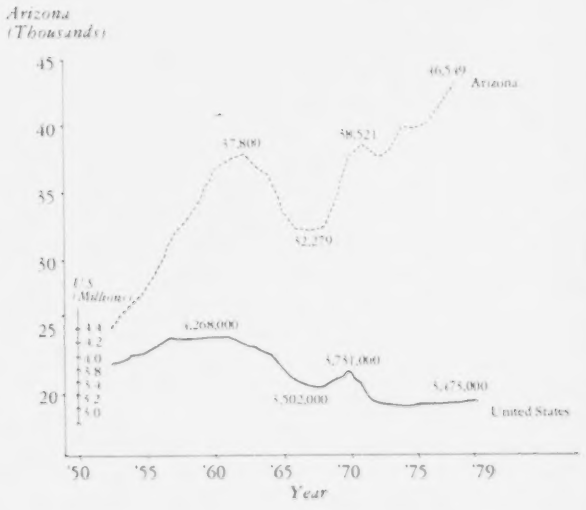
Source: Arizona rates estimated by the authors from age-specific birth data in annual issues of U.S. Department of Health, Education and Welfare, *Vital Statistics of the United States, Volume I — Natality;* and Arizona Department of Health Services sources and age-specific female population figures from the *U.S. Census of Population 1960 and 1970* and annual issues of *Population Estimates of Arizona;* United States rates compiled from various issues of *Vital Statistics, Volume I Natality* and *Monthly Vital Statistics Report.*

Total Births

While relatively similar patterns of declining birth rates are found when comparisons are made between birth rates for Arizona and the United States, the trends in the annual number of births have been much different. Figure III presents the time series of total number of live births in each year for both the state and the nation over the 1950-1979 period. The number of births in the United States rose substantially during the 1950s, reaching a peak of about 425,000 per year during the 1957-1961 period. After 1961, a long and sharp decline in the births occurred with total number of births finally falling more than 25 percent to slightly more than 300,000 in the 1973-1976 period. Since 1976, the aggregate number of births in the United States has begun to increase once more due primarily to increases in the number of women in the child bearing age in the United States population.

FIGURE III

TOTAL LIVE BIRTHS IN ARIZONA AND THE UNITED STATES, 1950-1979



Source: Arizona data from Arizona Department of Health Services, *Arizona Vital and Health Statistics.* United States data from U.S. Department of Health, Education and Welfare, *Vital Statistics of the United States, Volume I — Natality,* 1977 and *Monthly Vital Statistics Report,* various issues.

Figure III shows that the overall trend in the number of births in Arizona has been much different than in the United States during the 1950-1979 period. Due to the tremendous volume of migration into the state since World War II, the annual number of births in Arizona has grown from 20,500 in 1950 to 46,500 in 1979, even as the birth rate has declined from 27.4 to 17.7 births per 1,000 population.

Looking at the cyclical patterns in total births, the movements seen in the Arizona series are much more pronounced, with a sharp drop in the early 1960s, followed by an equally sharp increase in the later years of the decade. Downturns in the overall upward trend are also associated with the recession periods of 1971 and 1975. Similar patterns also exist in the United States time series but are more difficult to discern in the relatively more stable national total birth figures.

EXPLANATIONS

Popular explanations for the general pattern of Arizona and United States birth rates over the past thirty years include the changing roles of women, the emergence of the "me" generation, the development of more effective contraception, increased education, and delayed marriage with associated changes in cohabitational arrangements. In addition, economic demographers have sought a more complete understanding of the complex forces at work by supplementing standard methodology with economic analysis. Two viewpoints currently dominate economic discussions of the birth rate: the micro view of the Chicago-Columbia approach, and the macro view of Easterlin. These perspectives are reviewed in order to highlight and interpret the major factors in the present United States birth rates and to draw conclusions about the direction of the Arizona birth rate until the end of the century.

The Chicago-Columbia Approach

The Chicago-Columbia approach, founded by University of Chicago economist Gary Becker,[4] applied household demand theory to completed family size decisions in developed countries. Children are analyzed as if they were a consumer durable good, and the basic reason for the declining birth rate in the United States is that the cost of children relative to other goods has increased substantially during the last twenty years. Three contemporary themes underlie the reasoning:

The first relates to the effectiveness of contraceptives. With the introduction of the contraceptive pill in the late 1950s, children became more subject to planning and choice, that is, more of a demand than an unchecked supply phenomenon. As a result, people are more cost conscious, and unwanted births are far less prevalent.

The second theme is the women's movement. Chicago-Columbia economists argue that the correct price for children is a full price. This full price consists of a market goods component (food, clothing, toys, etc.) and a time component (caring, teaching, etc.). Children are assumed to be time intensive, particularly with respect to the woman's time. As women move into labor markets, the opportunity cost of their time goes up, and the full cost of a child escalates. In other words, households are less willing to forego vacations, cars, or other items that compete with children because children take up too much valuable time.

The third theme in this cost-conscious approach is the desire for quality over quantity. Both the quantity and quality of children are assumed to be positively related to income. However, Chicago-Columbia economists believe that the demand for child quality (piano lessons, special tutoring, camps, etc.) goes up more rapidly than the demand for actual number of children as household income increases. Therefore, as income goes up, households theoretically want more children and more quality, but they want quality so strongly that they have fewer children because of large quality expenditures on the first offspring.

Most Chicago-Columbia economists today are predicting low birth rates into the near future. Perhaps the best known extension of Chicago-Columbia reasoning into the future is the countercyclical model of Butz and Ward.[5] They argue that birth rates are low in the United States at the moment because of effective contraception and the desire of women to work. Moreover, they anticipate improving economic conditions during the mid-1980s which will drive birth rates even lower. Better conditions will lead to more women entering the work force,[6] thereby increasing the full cost of children.

The Easterlin Hypothesis

Richard Easterlin and his followers disagree with the Butz and Ward model and instead predict a "baby boom" in the United States, starting in the mid-1980s. This belief is based on a theory that combines Keynesian economics, the aging of birth cohorts (all persons born during a given year, as in the 1940 birth cohort meaning all persons born in 1940), the economics of marriage and labor force behavior, and the notion of *relative* income.[7]

The Easterlin hypothesis focuses on two basic groups of workers: the young, unskilled or semi-skilled workers

under thirty, many of whom are new entrants into labor markets; and the over-thirty group, many of whom (especially males) have settled into permanent, well-paying positions. In making career, marriage, and family size decisions, the younger workers are assumed to be strongly influenced by their current economic position relative to expectations from childhood.

Specifically, if younger workers feel better off than their parents at the same stage in the life cycle, their relative income is high. Consequently, they are more likely to marry at earlier ages and have more children than their parents. On the other hand, if young workers feel worse off, and their relative income is low, they delay or postpone marriage and births.

According to Easterlin, the major determinant of relative income in the United States since the 1930s has been the comparative size of birth cohorts. Before that time, investment booms and busts dominated American business cycles. Yet the booms did not lead to substantial increases in real wages for households because open immigration caused the work force to swell whenever the demand for labor increased, so relative income remained within rather narrow limits.

Then the situation began to change in the 1930s due to the post-World War I immigration quotas and the Keynesian revolution. The United States labor supply became far less elastic in the short run while aggregate demand became far more stable. For the small number of people born in the 1930s, this meant abundant job opportunities as they began to enter labor markets in the late 1940s and 1950s. The result was high relative income for young workers, leading to early marriage, single breadwinners within households, and an increased demand for larger families through the early 1960s.

However, once again the situation changed. The relative income of young workers began to decline in the 1960s as the people born during the baby boom of the late 1940s started to seek employment. Their large numbers caused a tightening of job opportunities, giving rise to delayed marriage, smaller completed parity per household, and a greater percentage of working women.[8]

Assuming the basic parameters remain the same, another upswing in births beginning in the mid-1980s can be readily forecasted. At that time, the birth-death group of the 1960s will start to enter labor markets. Facing this small supply of young workers is likely to be high aggregate demand—the baby boom individuals will be at their peak earning years and federal spending will likely remain high. Relative incomes therefore will rise once again, and the average number of children per household will increase accordingly.[9] If the Easterlin hypothesis is correct, this boom will last approximately two decades, and then another swing will occur.

Key Issues in Future Birth Rates

Given the high degree of contraceptive effectiveness and the fact that smaller numbers of young workers will enter job markets in the mid-1980s, several factors hold the key to the United States birth rate in the 1980s and 1990s:

The first factor is the state of the economy. Although economic conditions have been turbulent throughout the 1970s, there seems to be a general feeling within United States society that the new political administration will be more successful in fostering more favorable conditions for the United States economy during the 1980s.

A second factor relates to female work arrangements. If a baby boom is to occur, more women will have to withdraw from the labor force, at least temporarily. With recent changes in most employers' maternity leave policies, many women now have the opportunity to take a leave of absence without loss of position. Such temporary withdrawals from the labor force do not now have severe negative impacts upon women's careers as once was the case. Easterlin further asserts that a higher proportion of young women will choose to remain in the home rather than join the labor force as the relative economic circumstances of young households improve during the next decade.

It is also likely that the restructuring of household roles will be necessary if larger families are to occur in a society in which working wives are a predominant feature. In particular, the fathers in such families will have to take a larger role in the raising of children.

An additional factor relates to living arrangements and marriage plans among the young. The increase in total births in the United States since 1976 is most likely due to children born to women in their late twenties and early thirties who had previously postponed childbearing. Thus, the birth rate among this group is comparatively high at present. This means that young women, especially those between twenty and twenty-four, are the crucial group in determining whether a boom gets underway. At the moment their behavior would seem to indicate no sudden surge in births. For example, in 1960, 29 percent of women between twenty and twenty-four had never married, whereas by 1978 the proportion had risen to almost 48 percent.[10] In addition, the divorce rate is at an all-time high. Perhaps as many as 50 percent of all marriages will end in divorce over the next decade if present trends continue.

Some analysts have pointed to the growing practice of unmarried men and women living together as a deterrent to a possible increase in the birth rate. While it is true that such arrangements are less likely to result in births, this group constituted only 3 percent of the estimated 96.5 million married men and women living with a spouse in 1979.[11]

THE FUTURE

Since Arizona birth rates tend to move in conjunction with United States rates, as shown in Figures I and II, projections begin with some opinions about the United States as a whole.[12] In general, we feel the evidence seems to favor the Easterlin position over the Butz and Ward viewpoint. We are in agreement that the size of the group as they begin to enter labor markets, has a critical impact on their perceived well-being. So, like Easterlin, young workers in the mid-1980s can be expected to feel better off economically than their parents simply because of their smaller numbers.

In addition, although we cannot predict the future, it is our belief that economic conditions will generally improve in the 1980s in response to a number of factors, including changes in economic policies under the new administration to foster investment and increased productivity, restraint in monetary policy actions which will lead to a more stable economy, and demographic changes in the labor force that will also tend to improve productivity and reduce unemployment. With generally improved economic conditions and specifically with improved labor market conditions for the relatively smaller numbers of young workers, increased marriage and birth rates (especially for the twenty to twenty-four year age group), seem likely during the 1980s.

Also, while a massive movement of women back into the home is unlikely, the authors foresee a return to a greater family orientation as the "me" generation winds down. In the process, traditional male and female roles will probably be redefined and men will be more actively involved in child care. Finally, an upsurge in births seems likely in light of the natural cycles that characterize the birth rate in most of the human population.

History has constantly demonstrated that swings in the birth rate are the norm rather than the exception. Therefore, we forecast a general increase in both total births and the total fertility rate in the United States through the remainder of the twentieth century. The estimated total rate most likely is 2.1 to 2.2—in other words, replacement birth rate or slightly above. On the other hand, substantially higher figures such as 2.7 are a possibility. Upturns have a way of turning into outright booms as forces interact and socioeconomic conditions change.

As demonstrated by the statistics presented in the second section of the article, such a rise in fertility would have important effects upon United States society as the number of births rises from the 1979 level of 3.5 million to the 4 million births per year during the 1980s and the 3.8 million to 3.9 million births level during the 1990s. On the other hand, a pattern of decline to 3.3 million births in the 1980s and less than 3 million births per year by the year 2000 if current low fertility levels persist until the end of the century would see far different effects.

Because of continued rapid growth in the population of child-bearing ages in the state due to in-migration, the total number of births (and therefore the number of children) in Arizona will rise substantially even if low birth rate levels continue. Extrapolation of the current fertility rates through the remainder of the century would imply that the annual number of births would fall in the 45,000 to 50,000 range during the 1980s, and between the 50,000 to 60,000 range during the 1990s. If, on the other hand, the total fertility rate rose to the 2.1 children figure (consistent with the Series III projections for the nation), the projected number of births would be over 51,000 in 1985, about 58,000 by 1990, and over 70,000 by the year 2000.

This analysis has previously demonstrated that Arizona fertility has been consistently higher than for the entire nation and that upturns have generally been more pronounced when they occur. If the Arizona economy continues to be growth-oriented, and the state's society remains more conservative and family-oriented than that of the United States as a whole, it is also likely that fertility levels in Arizona will remain above the national average. Assuming, for example, a total fertility rate of 2.7 children per woman (consistent with the Series I United States projections), the annual number of births could exceed 60,000 by 1985, 70,000 by 1990, and reach over 85,000 by the year 2000.

To the extent that such an upswing in births occurs during the 1980s in Arizona, and to a lesser extent in the United States as a whole, business people, governmental officials and the public in general should be prepared for the consequences. Some of the recent shifts in product planning and markets will need to be modified—there will be more young households with young children rather than the freer unmarrieds and childless couples. Such households with young children will be buying more baby food, toys, and other child-oriented products

and spending less on such items as travel and two-person sports cars. To the extent possible, given the high cost of housing, it might be expected that the demand for homes with larger numbers of bedrooms would increase to accommodate families with two (or maybe even three) children rather than childless or one-child families.

Similarly, to the extent that births increase, governmental officials will have fewer worries about declining school enrollments; and, in growing areas, school officials may have to worry about how to handle larger and larger numbers of children in the 1980s. In general, planners will have to pay more attention to youth-oriented concerns than would be the case if the birth rate remains at the low level of the 1970s.

If a substantial increase in the birth rate occurs during the 1980s, it will largely be a result of the interaction of demographic and economic factors emphasized by Easterlin's analysis. Just as the small birth cohorts of the 1930s produced the post-World War II baby boom, the smaller birth cohorts born during the period of fertility decline in the 1960s will in turn produce a smaller version of a baby boom in the 1980s, thus continuing the cyclical pattern of birth rates.

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[1]Thomas Malthus, *An Essay on the Principle of Population*, 1798.

[2]Completed family size is defined as the average number of children a cohort of women starting at fifteen would bear by age forty-four.

[3]R. A. Easterlin, M. Wachter, and S. Wachter, "The Coming Upswing in Fertility," *American Demographics* (February 1979), pp. 12-15.

[4]Gary Becker, "An Economic Analysis of Fertility," in *Demographic Economic Change in Developed Countires*, Universities-National Bureau Conference Series II, (Princeton, NJ: Princeton University Press, 1960); "A Theory of the Allocation of Time," *Economic Journal* 75 (September 1965): pp. 493-517; "A Theory of Social Interactions," *Journal of Political Economy* 82 (November/December 1974): pp. 1063-1094; Becker, and H. Gregg Lewis, "On the Interaction Between the Quantity Quality of Children," *Journal of Political Economy* 81, supplement (March/April 1973): pp. S279-288; and Becker and Nigel Tomes, "Child Endowments and the Quantity and Quality of Children," *Journal of Political Economy* 84, supplement (August 1976): pp. S143-162.

[5]William Butz and Michael Ward, "The Emergence of Countercyclical U.S. Fertility," *American Economic Review* 69 (June 1979): pp. 318-328; and "Baby Boom and Baby Bust: A New View," *American Demographics* (September 1979): pp. 11-17.

[6]As an indication of the willingness of women to work, between 1960 and 1977 in the U.S., the proportion of women in childbearing years who are employed increased from less than two-fifths to about three-fifths. Indeed, the forecasting firm of Donaldson, Lufkin, and Jenerette predicts that between now and 1990, 65 percent of all new jobs created will be taken by women, so that they will account for 45 percent of the job holders compared to the current 38 percent. For more arguments along these lines, see "The Hot Branch of Economics," *Dun's Review* (May 1979): pp. 50-57.

[7]Although the ideas are found throughout Easterlin's research since the early sixties, the most complete statement is in his presidential address to the Population Association in 1978, "What Will 1984 Be Like? Implications of Recent Twists in Age Structure," reprinted in *Demography* 15 (November 1978): pp. 397-432.

[8]In fact, Easterlin argues that the woman's movement was caused by the economic conditions of the 1960s.

[9]As pointed out earlier, Easterlin and his colleagues have projected a TFR of 2.7 for the boom.

[10]Charles Westoff, "Marriage and Fertility in Developed Countries," *Scientific American* 239 (December 1978): p. 54.

[11]U.S. Bureau of the Census, "Marital Status and Living Arrangements: March, 1979," *Current Population Reports*, Series P-20, No. 349 (February 1980).

[12]These conclusions are the opinions of the authors based on their analysis of factors discussed earlier in the article.

Training and Development in the Phoenix Area

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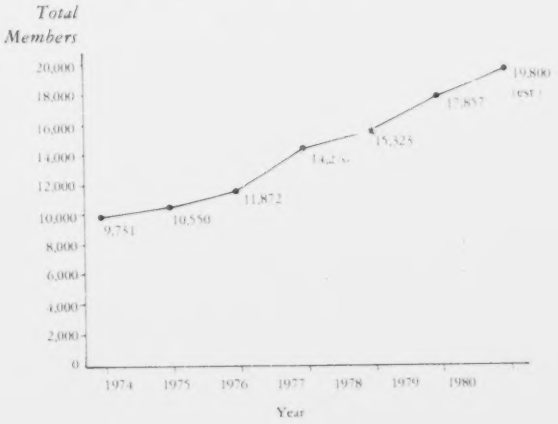
C. EDWARD KUR

Training people at work is big business. In fact, one training expert has estimated that in 1979, American business spent approximately $100 billion on training.[1] Most major corporations have at least one training specialist, and many companies employ several professional training and development people. As an example of the rapid growth in this field, Figure I shows the membership growth in the American Society for Training and Development (ASTD), the largest organization of training professionals in the world. Clearly, the training field is growing as organizations use more complex technology to create goods and services for a rapidly changing society.

Certainly work place training, as distinguished from degree programs and other school-related forms of post-secondary education, has also been growing in importance in the Phoenix metropolitan area. For example, enrollment for programs offered by the Center for Executive Development in the College of Business Administration at Arizona State University has grown from 3,348 in 1969-1970 to 10,574 in 1979-1980.[2]

This article presents the results of a survey of training professionals in the Phoenix metropolitan area. The purposes of this study were to identify the training techniques which Phoenix-area training professionals view themselves as most able to use; to determine these trainers' perceived skill levels in teaching a variety of topics that are frequent subjects in many organizational training programs; and to identify techniques and topics

FIGURE I
MEMBERSHIP IN THE AMERICAN SOCIETY FOR TRAINING AND DEVELOPMENT



Source: American Society for Training and Development.

Training professionals in the Phoenix area are confident of their ability to use many of the most effective training methods. In addition, they also feel prepared to teach courses in most topic areas.

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in which local training professionals need to increase their skills.

The results of this study can be useful in several ways. First, managers who are hiring training specialists may use the data presented as a frame of reference for evaluating the technical skills of candidates. Second, the data may help such managers decide whether qualified people are available locally or whether a national search is necessary. Third, managers may use these data to evaluate the organization's present training staff and to plan for the professional development of training staff members. Finally, program planners in Phoenix area training associations can refer to this study to help plan needed programs for their members.

SCOPE OF THE STUDY

Questionnaires were sent to the 264 members of the Valley of the Sun Chapter of ASTD.[5] These individuals were assumed to be representative of training professionals in the Phoenix metropolitan area. Ninety completed surveys were returned for a response rate of 37.9 percent.

The survey asked the respondents to rate their ability *to use* each of twenty training techniques and also their abilty *to teach* each of twenty training topics. The techniques on the list are commonly used throughout the training field; the topics have frequently been offered in courses throughout the country, and their selection was based upon a review of course brochures. People rated their own skills using a scale ranging from 1 ("not well at all") to 7 ("very well").

Two general categories of techniques were covered in the survey. One category consisted of fourteen techniques based primarily upon interpersonal action between trainees and an instructor, supervisor, or peer; in situations where the trainee is instructed by a supervisor or peer (i.e., coaching, job instruction training, job rotation, and apprenticeships), a training department is normally responsible for the design and implementation of the program. The second category of techniques involves the use of six audio-visual devices. The techniques within each category are briefly described below.

TECHNIQUES STUDIED

Interpersonal Techniques

Lecture. This is among the oldest and most widely used method of instruction. In the lecture method a speaker or trainer transmits information to listeners. The transmission is basically in one direction: from speakers to relatively passive listeners.

Roleplaying. In this technique, participants pretend they are involved in a well-defined situation, and they spontaneously interact as if the situation were real.[4] For example, trainees might act out a discussion between an angry employee and a supervisor as a basis for learning how to deal with anger.

Case Study. In this approach, groups of trainees analyze and discuss a written or filmed description of organizational problems similar to those they face on the job.

Coaching. This is a process of one-to-one interaction, typically between a supervisor and a subordinate, in which the supervisor helps the subordinate acquire and apply new skills, knowledge or attitudes.[5] The technique is an important one for training professionals to know because they are often expected to teach the supervisor how to be an effective coach.

Job Instruction Training. This on-the-job instructional program is intended to teach the specific skills and behaviors required for a specific job or task. Generally, trainees are taught by their supervisors or by working side by side with more experienced employees, who in turn are usually taught how to use the technique by members of the training department.[6]

Teambuilding. This method is generally classified as an organization development method as well as a training technique. In teambuilding, a work group does research on its own technical and interpersonal processes, often with the help of a training professional in the role of consultant or facilitator. As the group members study the research data together, they develop and experiment with more effective methods of working together.[7]

Behavior Modeling. This technique requires that trainees study films or tapes of people who perform a particular task properly. The trainees then practice or rehearse doing the task the way it was shown. Trainers provide constructive feedback and support.[8]

Programmed Instruction and Computer-Assisted Instruction. In programmed instruction (PI), the training materials — usually books or decks of cards — are the "instructor" which teach and test the students in the absence of a human trainer. For instance, if the trainee answers a test question incorrectly, he or she is told what page or card to refer to for remedial instruction. Computer-assisted instruction (CAI) is a form of programmed instruction in which the trainee interacts with a preprogrammed computer instead of a book or cards. Trainees receive immediate feedback and set the pace of their own training.

Business Games. A business game simulates the operation of a complex business organization over a fixed period of time, with trainees assuming the roles of the organization's top managers. By means of feedback each month, quarter, or year on the outcomes of their decisions, the trainees learn general management skills.

Sensitivity Training. This technique has been widely used to help managers increase their awareness of their own emotional impact on others as well as others' impact on them. In sensitivity training, a small group of strangers work together for up to two weeks in an unstructured, agenda-free setting to learn to become more interpersonally effective.[9]

In-Basket. This technique is used to simulate the administrative aspects of a managerial job. Trainees are required to read and respond to a large number of letters, proposals and memoranda in an in-basket. The technique is frequently used to *measure* various skill levels as well as to *teach* the skills.

Job Rotation. Here the trainees are moved among a series of jobs or tasks in order to broaden their knowledge of the organization.

Apprenticeships. These are planned or structured programs in which the trainee works on the job under the guidance of more experienced people. This activity is supplemented with classroom training related to the job. In unionized industries, apprenticeship programs tend to be sponsored jointly by the union and management.

Audio-visual Techniques

Overhead Projection. This technique requires that visual aids be prepared prior to the training session. The aids are 8½ by 11 inch photographic or xerographic "slides" with images that are projected onto a screen by a projector.

Films and Videotape. Motion pictures are widely used be training professionals. Generally, films are produced by studios and sold or rented to trainers. Videotape, on the other hand, has enabled trainers to produce their own personalized programs. Futhermore, videotape or instructional television (ITV) makes it possible for people to perform a job function and then immediately watch themselves on a television monitor.

Slides and Filmstrips. Photographic slides and strips can be used in conjunction with other techniques to convey ideas visually. Often, several slide projectors are synchronized with one another and with an audio tape recorder to convey dramatic multi-image, multi-sensory messages.

Opaque Projection. This technique is similar to overhead or transparency projection except that any written, drawn, or typed material can be projected without first making transparent photographic or xerographic slides.

RESULTS OF THE SURVEY

Table 1 shows how respondents rated their own ability *to use* each of the twenty training techniques. They view themselves as most able to use lectures and overhead projection. Roleplaying and case study, which require a high level of trainee involvement, were ranked third and fourth, respectively. The two techniques in which the supervisor often plays the role of instructor —coaching and job-instruction training — were ranked fifth and sixth.

Respondents viewed themselves as least skilled in using computer-assisted instruction. Apprenticeships and job rotation were ranked next lowest. Slighty higher ratings were given to in-basket, opaque projection, and sensitivity training.

Table 2 shows how respondents rated their own ability *to teach* each of twenty training topics. Phoenix area training professionals say they are most capable of teaching motivation followed by several topics related to communication: effective listening, giving and receiving feedback, effective speaking, and conducting meetings. Numerous studies show that much of managers' time is spent on tasks associated with these topics.[10] Also, Phoenix area trainers view themselves as capable of teaching problem-solving skills.

On only two topics did respondents rate their teaching capability below the neutral point (4 on a scale of 1 to 7): office management (3.0) and selling (3.1). Four other topics were rated very near the neutral point, indicating only an average capability in teaching these topics. Yet each of the four — controlling, staffing, directing, and management by objectives — is treated as an important aspect of management by the majority of writers of management texts.

CONCLUSIONS AND IMPLICATIONS

An encouraging finding is that Phoenix area training professionals consider themselves most competent in the use of some of the most effective techniques in the field of training. For instance, according to research, the lecture technique, *when used by skilled speakers,* is quite effective in transmitting knowledge and is favorably received by program participants.[11] Both lecture and overhead projection are often used because they tend to be economical and are easily adapted to training settings.

TABLE 1
TRAINERS' PERCEIVED ABILITY
TO USE TWENTY TRAINING TECHNIQUES

Training technique	*Can use "not well at all"* 1 2 3 4 5 6 7 *Can use "very well"*	*Mean response*	*Standard deviation*
Lecture		5.3	1.5
Overhead projection		5.3	1.5
Roleplaying		5.0	1.7
Case study		4.9	1.4
Coaching		4.8	1.7
Job instruction training		4.8	1.7
Slides		4.7	1.7
Teambuilding		4.7	1.7
Films		4.5	1.9
Videotape		4.3	2.1
Behavior modeling		4.2	1.9
Programmed instruction		4.0	1.7
Business games		3.9	1.6
Filmstrips		3.9	1.8
Sensitivity training		3.8	2.0
Opaque projection		3.8	1.5
In-basket		3.6	1.8
Job rotation		3.5	1.7
Apprenticeships		3.0	1.7
Computer-assisted instruction		2.2	1.6

Source: Survey Conducted by the authors.

TABLE 2
TRAINERS' PERCEIVED ABILITY
TO TEACH TWENTY TRAINING TOPICS

Training topic	*Can Teach "not well at all"* 1 2 3 4 5 6 7 *Can Teach "very well"*	*Mean response*	*Standard deviation*
Motivating		5.3	1.8
Effective listening		5.2	1.6
Giving and receiving feedback		5.1	1.6
Effective speaking		5.0	1.6
Conducting meetings		5.0	1.7
Problem-solving		5.0	1.7
Time management		4.9	1.6
Performance appraisal		4.9	1.8
Planning		4.9	1.8
Organizing		4.7	1.8
Decision-making		4.7	1.8
Selection interviewing		4.6	1.8
Handling stress		4.6	1.7
Effective writing		4.5	1.6
Management by objectives		4.4	1.7
Directing		4.4	1.7
Staffing		4.3	1.8
Controlling		4.2	1.7
Selling		3.1	2.1
Office management		3.0	1.6

Source: Survey conducted by the authors.

Roleplaying and case studies, among the higher-ranked techniques, are both effective in teaching problem-solving skills and in changing attitudes. Both of these techniques tend to be favorably received by participants in training programs.[12]

Perhaps the primary strength of coaching and job instruction training is that they involve the immediate supervisor in the training process. The result often is an improved relationship between the supervisor and the trainee and a better chance that the learning will be used in the job setting.

A number of explanations exist for the low level of skill reported by Phoenix area trainers in using several of the techniques. For example, the cost of developing software for computer-assisted instruction is high. Furthermore, few trainers have the skills to do the programming themselves, and some people prefer to be instructed by a person rather than by a machine.[13]

It is possible that local trainers are not skilled in designing and conducting apprenticeship and job rotation training programs because of the expense of these programs. Furthermore, developing apprenticeship programs often requires cutting through the red tape and politics that separate labor from management. Job rotation training requires resolving the interdepartmental rivalries that plague many organizations. In other words, the costs of such programs are high.

The low level of skill associated with in-basket training can be attributed to the fact that the technique is more likely to be used by personnel analysts as a selection tool than by trainers as a training technique.

The opaque projector is a cumbersome device that offers few advantages over the lighter-weight transparency projector. Although opaque projection does not require preparation of transparencies, any company with a copying machine can produce its own transparencies inexpensively. Furthermore, moving from one visual aid to the next is much quicker with transparency projection, and a trainer using properly designed transparencies can build a visual story by adding transparencies during a presentation with each component filling in the visual image on the screen.

It is not known why Phoenix area trainers do not feel better skilled in the use of sensitivity training. Perhaps the controversy generated by this technique is responsible for its infrequent use in the Valley. This controversy centers on two concerns. First, some critics have charged that sensitivity training produces anxiety and is disruptive to the psychological health of some participants. Second, the training has sometimes been conducted by unqualified facilitators. Regardless, research shows this technique to be useful in changing attitudes and developing interpersonal and problem-solving skills.[14]

Overall, local training professionals are confident in the use of *many* of the most effective training methods. In addition, they feel well-prepared to teach courses in most topic areas covered by this survey. For all but two of the topics — selling and office management — a considerable number of skilled instructors are available. The supply of qualified professionals appears to be greatest for training programs covering motivation of employees and communication skills.

Three conclusions can be drawn from this study. First, knowledgeable training professionals apparently are available locally, and a national search may not be necessary to recruit people who can use effective techniques or teach training and development topics. This holds true whether one is seeking to develop an in-house training staff or to hire a local consultant.

Second, it is probably realistic to expect one's training staff to be skilled in using several training techniques and in teaching a broad range of topics. Training managers might wish to examine the qualifications of their own staffs to determine where further skill development is needed. Clearly, professional help is available locally to provide for this development.

Third, program planners in the various professional training associations should note techniques in which local trainers feel less confident. Train-the-trainer workshops in these techniques would be worthwhile.

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[1]Jerome J. Peloquin, "Training: The Key to Productivity (Or: How We Can Save the World for Capitalism)," *Training and Development Journal*, February, 1980, pp. 49-52.

[2]These data were provided by the Center for Executive Development.

[3]The study upon which this article is based was funded by the Valley of the Sun Chapter of the American Society for Training and Development.

[4]Joseph L. Moreno (Ed.), *Group Psychotherapy* (Beacon House: Beacon, N.Y., 1945).

[5]Herbert J. Chruden and Arthur W. Sherman, *Personnel Management* (South-Western: Cincinnati, Ohio, 1980).

[6]Bird McCord, "Job Instruction," In Robert L. Craig (Ed.), *Training and Development Handbook* (McGraw-Hill: New York, 1976).

[7]Wendell L. French and Cecil H. Bell, Jr., *Organization Development* (Prentice-Hall: Englewood Cliffs, New Jersey, 1978).

[8]A. Goldstein and M. Sorcher, *Changing Supervisory Behavior* (Pergamon: New York, 1974).

[9]French and Bell, Ibid., p. 143.

[10]Don Hellriegel and John W. Slocum, Jr., *Organizational Behavior* (West Publishing: St. Paul, Minn., 1979).

[11]Charles E. Watson, *Management Development Through Training* (Addison-Wesley: Reading, Mass., 1979).

[12]Ibid., p. 214.

[13]I. L. Goldstein, *Training: Program Development and Evaluation* (Brooks-Cole: Monterey, CA., 1974).

[14]Watson, p. 214.

Phoenix Retired Couple's Budget — 1979

ROBERT T. KEIM
CAROL ZIMMERMAN

To maintain a moderate standard of living, a hypothetical Phoenix area retired couple required $9,783 in 1979. This figure reflects an increase of 10.4 percent over the 1978 figure for the metropolitan area. These figures are the result of a study conducted by the Bureau of Business and Economic Research, College of Business Administration, at Arizona State University.[1] The budget, which is based upon consumption patterns determined by the United States Bureau of Labor Statistics (BLS), is directly priced during the fourth quarter each year.

The retired couple consists of a husband age 65 or over and his nonworking wife. They are self-supporting and live as a separate household in the Phoenix metropolitan area. The couple is assumed to possess an average inventory of clothing and household goods and considered to be in reasonably good health with Medicare providing for most of their medical needs. Sixty-five percent of the couples own their home mortgage-free, with the remaining 35 percent renting.

The Phoenix Retired Couple's Budget Study is based on methodology developed by the Bureau of Labor Statistics and described in Bulletins 1570-4 and 1570-6. The contents of the budget, the item specifications, and allowed quantities of each item were set by the BLS in consumer expenditure surveys that determined which goods and services families were actually purchasing at the time of their survey, which was 1965. It provided for a lifestyle described as "an intermediate level of living" for a retired couple in the Phoenix metropolitan area. However, since the BLS has not changed specifications, items still reflect mid-1960s consumption patterns.

It must be emphasized that the budget does not report the *average* annual expenditure of households, but rather only the amount of income required to purchase a predefined basket of goods held constant over time.

This budget study does have considerable consistency. In the Phoenix metropolitan area, nearly identical goods have been priced each year. Changes in the year-to-year costs are almost entirely due to changes in prices of the goods and services included rather than to alterations in the budget composition.

Phoenix is not one of the cities on which the BLS keeps Retired Couples data. Since 1969, the Bureau of Business and Economic Research has utilized the BLS-developed methodology to report the budget figures for a hypothetical Phoenix retired couple at the intermediate level. These data are collected by direct pricing of the specified consumer goods and services. On the other hand, BLS studies for other cities merely update their 1969 direct prices by components of the Consumer Price Index. Because of this difference in methodology, these figures *cannot* be accurately compared to those issued by the BLS for other cities.

The largest increases in the Retired Couple's Budget occurred in Clothing/Personal Care (22.2 percent), Transportation (13.3 percent) and Housing (10.8 percent). Table 1 details a comparison of the Phoenix area budgets for 1978 and 1979.

Percentage increases in all categories ranged from nearly 9 percent to more than 22 percent. Food expendi-

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The largest percentage increases in the Retired Couple's Budget occurred in the areas of clothing and personal care, transportation, and housing, while food showed the largest dollar increase.

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FIGURE I
TOTAL BUDGET
(Retired Couple's Budget)

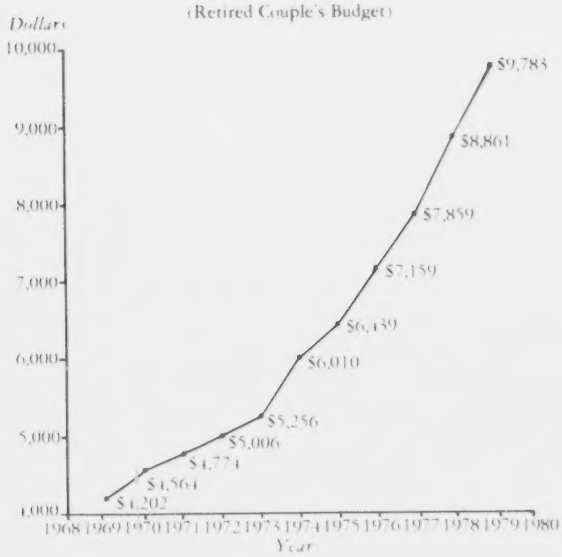


FIGURE II
FOOD
(Retired Couple's Budget)

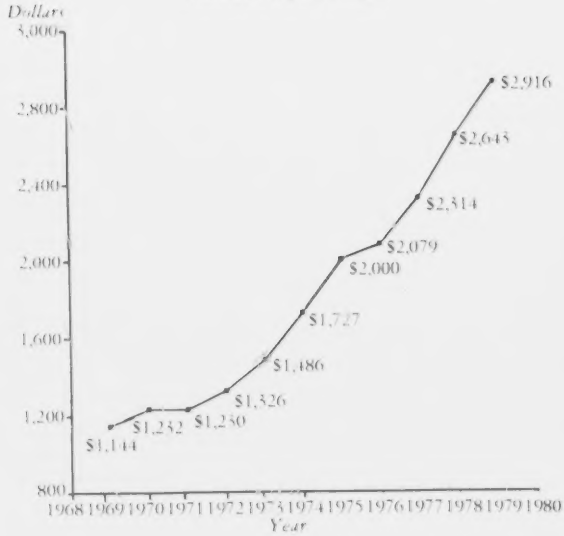


FIGURE III
HOUSING
(Retired Couple's Budget)

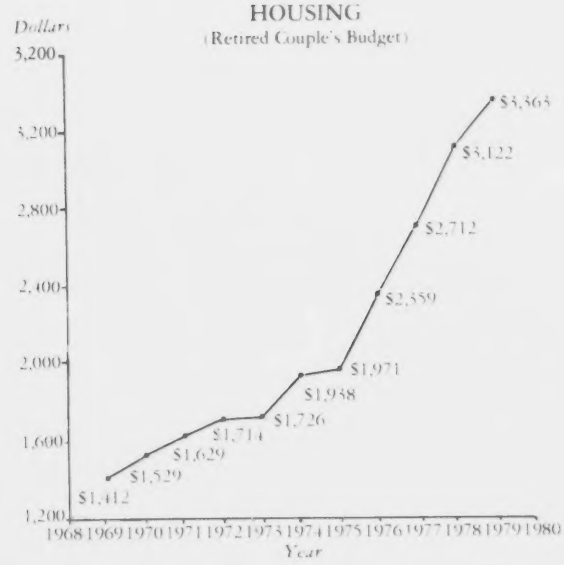
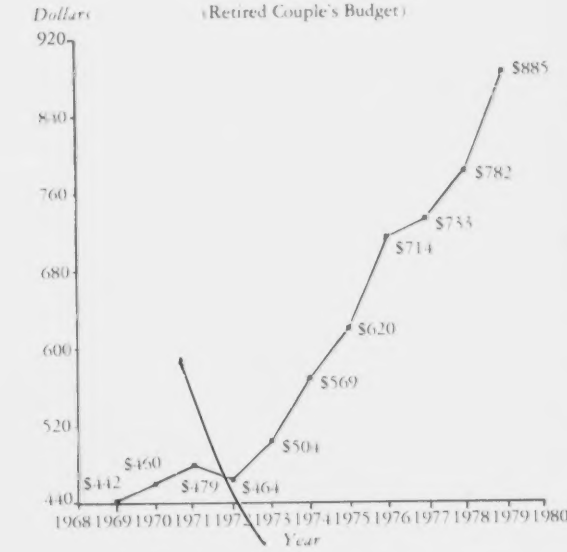


FIGURE IV
TRANSPORTATION
(Retired Couple's Budget)



Source: Bureau of Business and Economic Research, College of Business Administration, Arizona State University, in cooperation with Valley National Bank.

FIGURE V
CLOTHING/PERSONAL CARE
(Retired Couple's Budget)

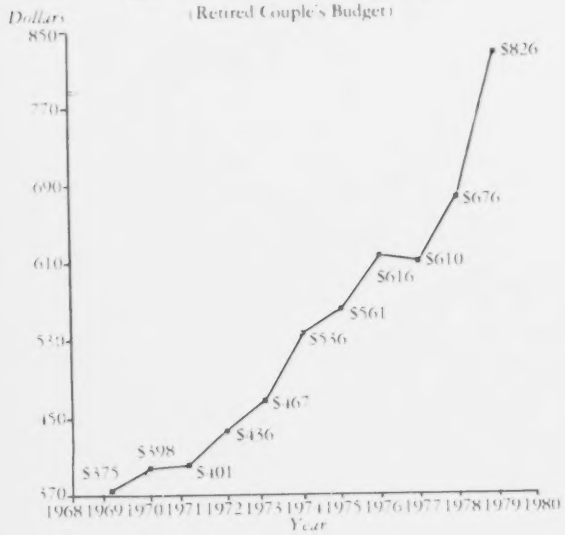


FIGURE VI
MEDICAL CARE
(Retired Couple's Budget)

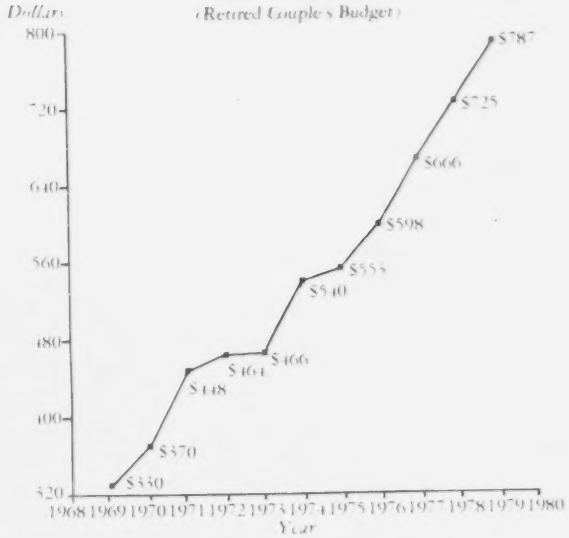


FIGURE VII
OTHER FAMILY CONSUMPTION
Alcoholic Beverages; Tobacco Products; Reading and Recreation
(Retired Couple's Budget)

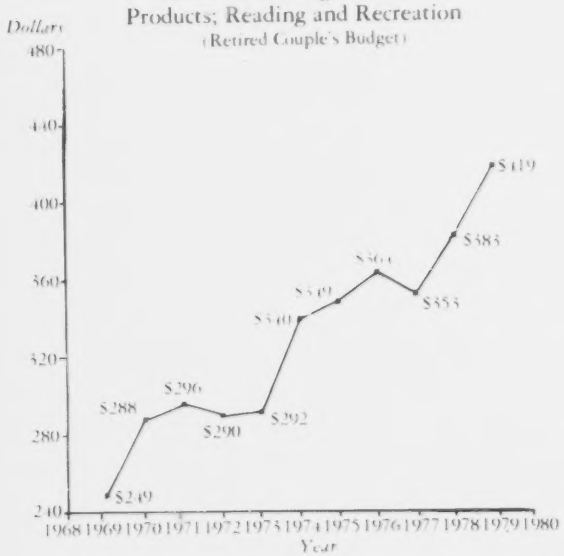
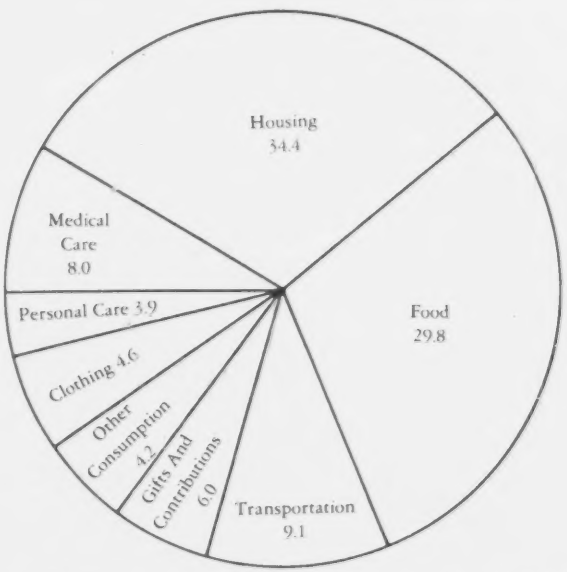


FIGURE VIII
PERCENTAGE DISTRIBUTION
OF EXPENDITURES, 1979
(Retired Couple's Budget)



Source: Bureau of Business and Economic Research, College of Business Administration, Arizona State University, in cooperation with Valley National Bank.

tures for the year increased $273, an increase of 10.3 percent over 1978, showing a comparatively low percentage gain but the highest dollar increases for the individual consumption categories. Housing costs, which jumped $241 (10.8 percent) showed the second highest dollar gain. Transportation costs, with the second highest percentage gain, 13.3 percent, increased $104. The Clothing/Personal Care category reported the highest percentage gain, 22.2 percent, resulting in a $150 increase. Medical Care jumped $62 for the lowest percentage increase of all budget categories, 8.6 percent. Other Family Consumption went from $383 to $419 showing a 9.4 percent increase. Other Items, a category that consists of gifts and contributions, increased $55 for a 10.4 percent increase.

TABLE 1

RETIRED COUPLE'S BUDGET
METROPOLITAN PHOENIX
(Percentage change 1978-1979)

	1979	*1978[b] (Revised)*	*Percentage Change*
Total Budget	$9,783	$8,861	10.4
Total Family Consumption	9,196	8,330	10.4
Food	2,916	2,643	10.3
Housing	3,363	3,122	10.8
Transportation	886	782	13.3
Clothing/Personal Care	826	676	22.2
Medical Care	787	725	8.6
Other Family Consumption	419	383	9.4
Other Items[a]	586	531	10.4

Note: Details may not add due to rounding.

[a]*Other Items* consist of gifts and contributions.

[b]1978 figures have been adjusted to reflect appropriate budget weights and tax rates.

Source: Phoenix data are compiled by the Bureau of Business and Economic Research, College of Business Administration, Arizona State University, in cosponsorship with the Valley National Bank.

Figures I through VII display the historic eleven-year trend for the Phoenix area budget categories. The increases in each category are demonstrated by the steep slopes of these lines for the past few years.

DISTRIBUTION OF EXPENDITURES

Table 2 details the comparison of the 1978 and 1979 distribution of budget expenditures. The distribution for the 1979 budget is graphically depicted in Figure VIII. No significant change in the allocation of the budget was detected as prices increased broadly during the past year.

Family Consumption took 94 percent of the total budget. Food and Housing each represented approximately one-third of the total budget. Thus, with Food taking 29.8 percent and Housing requiring 34.4 percent, these two categories consumed nearly two-thirds of the Phoenix retired couple's budget.

TABLE 2

PHOENIX RETIRED COUPLE'S BUDGET:
PERCENTAGES OF TOTAL BUDGET
AUTUMN, 1979, AND AUTUMN, 1978

	1979 (Percentage of Total Budget)	*1978[b] (Percentage of Total Budget)*
Total Budget	100.0	100.0
Total Family Consumption	94.0	94.0
Food	29.8	29.8
Housing	34.4	35.2
Transportation	9.1	8.8
Clothing/Personal Care	8.4	7.6
Medical Care	8.1	8.9
Other Family Consumption	4.3	4.3
Other Items[a]	6.0	6.0

Note: Details may not add due to rounding.

[b]1978 figures have been adjusted to reflect appropriate budget weights and tax rates.

[a]*Other Items* consist of gifts and contributions.

Source: Phoenix data are compiled by the Bureau of Business and Economic Research, College of Business Administration, Arizona State University, in cosponsorship with the Valley National Bank.

SUMMARY AND FORECAST

The increase of 10.4 percent in the retired couple's budget for the Phoenix metropolitan area continued in the double-digit range but eased slightly from the 1978 increase of 12.4 percent.[2] The increase for 1979 is about two-thirds the increase in the Consumer Price Index (CPI) during this same time period (15.3 percent).[3] The difference can be partially explained by the assumption that 65 percent of the retired couples own their own home with no mortgage. Furthermore, the subset of items priced for this budget is not as comprehensive as the CPI price data. However, based upon the ever increasing CPI figures, the Phoenix area retired couple should be in for another year of double-digit increases for 1980.

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[1]This research is cosponsored by the Valley National Bank.

[2]"Phoenix Retired Couple's Budget," *Arizona Business*, November, 1979.

[3]"Metropolitan Phoenix Consumer Price Index, Fourth Quarter, 1979," *Arizona Business*, February, 1980.

Doctoral Dissertation Abstract

COLLEGE OF BUSINESS ADMINISTRATION
ARIZONA STATE UNIVERSITY

Editor's Note: *Our readers are often interested in research undertaken by doctoral candidates in the College of Business Administration at Arizona State University. Therefore, we occasionally include one or two abstracts of doctoral dissertations in* Arizona Business. *Readers who wish further information on any of these subjects may examine the complete dissertations in the ASU Hayden Library.*

AN ANALYSIS OF COMMUNICATION BARRIERS IN PUBLIC ACCOUNTING FIRMS

Steven Golen

Accountants in public practice are involved in essentially two types of communication situations, and these situations are classified according to the two types of intended receivers. First, the accountants attempt to communicate with clients (i.e., accountant-client communications). Second, the accountants must communicate among themselves (i.e., accountant-accountant communications).

The purpose of this study was to determine which communication barriers to effective communication are perceived as most serious by accountants in their accountant-client relationship and their accountant-accountant relationship in the audit, tax, and management advisory services departments in public accounting firms in the Greater Phoenix Metropolitan Area.

One instrument was used to measure the degree of seriousness regarding thirty-three communication barriers. The accountants were asked to complete the instrument based on their accountant-client relationship and their accountant-accountant relationship.

The one-way analysis of variance was used for the statistical analysis of two major and twenty-two minor hypotheses. Also, the one-way analysis of variance was used to determine if there was any significant difference between each item on the instrument and the various demographic characteristics in both the accountant-client and accountant-accountant relationships. A composite rank of the communication barriers was based on mean scores.

Accountants perceive the seriousness of the communication barriers the same regardless of their current department, type of firm, age, sex, years in public accounting, highest degree attained, completion of a communications course, state where undergraduate degree was received, and membership in a social or fraternal collegiate organization.

In regard to the accountants' present position and attainment of a CPA, the perceptions of the seriousness of the barriers are not the same. The accountants in lower-level staff positions (i.e., junior and senior staff) and those who do not have a CPA, perceive the communication barriers as more serious.

Based on mean ratings, a "hostile attitude" was ranked as the most serious in the accountant-client relationship, and a "tendency not to listen" was ranked as the most serious in the accountant-accountant relationship.

In the comparison of the accountant-client relationship and the accountant-accountant relationship, only four out of thirty-three barriers were significant when comparing the means of the individual barriers between the two relationships. Therefore, the accountants will likely perceive the communication barriers the same regardless of the relationship.

The significant barriers could be used as a guide for study and research in business communications and accounting classes. Also, accounting students should be challenged to develop their interpersonal skills by analyzing potential barriers to effective communications in small group discussions.

Steven Golen is a faculty member in the Department of Office Administration at Louisiana State University, Baton Rouge, Louisiana. Chairman of his dissertation committee was Dr. Thomas Inman, Professor of Administrative Services.

The Arizona Business Scene

Recent Trends in Arizona Electrical Power Sales

The volume of Arizona's electrical power sales, reported monthly in *Arizona Business*, is used as one of several economic indicators. In addition, electrical power sales are of growing interest due to high costs and to shortages in the energy supply. Two previous "Arizona Business Scene" articles have discussed trends in this economic indicator (December, 1977, and February, 1979, issues). Recent changes in these trends as well as other aspects of this economic indicator are reviewed in this article.

Electrical power in Arizona is used by various types of customers: residential, commercial, large user (primarily industrial and mining), irrigation, and others. Over the past 25 years significant changes have occurred in the share of electrical power used by each of these types of customers (the *demand mix*), as illustrated in Table 1. The changes in the demand mix indicate the changes the state has undergone during these years of rapid growth. From 1955 to 1965 the percentage of power used by residential, commercial, and large user customers increased while the percentage of sales for agricultural purposes decreased significantly. Since 1965, commercial and large user percentages have been relatively stable. The share of residential usage has continued to increase and that of agriculture has decreased, but this trend has slowed in recent years. These changes in the demand mix indicate that the Arizona economy is maturing with a balance among commercial, industrial and mining, and agricultural sectors. Residential growth is slowing to near the same pace as that of the economy as a whole.

Total electrical power sales have increased steadily in Arizona. Through 1974, yearly total sales increased rapidly, with the annual rate of increase often exceeding 10 percent, although the rate of growth has been slower since 1974 as illustrated in Table 2. The growth in electrical power sales has been due to both increased sales per customer and to the growth of the state, which has resulted in many more users of electrical power. For residential power sales, population growth is not a good measure of growth in sales, however, because the number of households (and thus the number of customers) has increased more rapidly than the population due to a decrease in household size. Commercial and large user sales of electrical power have increased at approximately the same rate as the population growth rate.

Table 2 shows that energy usage per customer (residential sales per household) increased rapidly through 1973 but has stabilized since then. Essentially the same pattern is present in both commercial and large user sales per capita. The energy shortage with its accompanying rapid price increases first began in 1974. These price increases and the national campaign to conserve energy has resulted in a leveling off of electrical usage per customer. Since 1974 the increase in total electrical sales has been caused essentially by new people moving into the state and by new businesses and industries.

Thus each electrical power customer is no longer using more electrical power each and every year. But each customer is still using as much electrical power as at

TABLE 1

PERCENTAGE OF ELECTRICAL POWER USED IN ARIZONA
BY TYPE OF CONSUMER, 1955-1979

	Residential	*Commercial*	*Large User*	*Irrigation*	*Other*	*Losses*	*Total*•
1955	16.4	21.0	15.6	33.2	2.5	11.4	100.1
1960	19.7	21.4	23.1	23.9	2.8	9.6	100.5
1965	22.6	24.2	26.8	15.4	1.9	9.6	100.5
1970	26.3	24.5	26.5	11.5	2.0	9.2	100.0
1975	30.2	24.7	23.2	10.5	2.5	8.8	99.9
1976	29.1	25.9	25.1	8.6	2.5	8.6	99.8
1977	30.0	25.2	23.2	7.7	6.0	8.0	100.1
1978	30.4	25.1	23.3	6.0	5.8	9.3	99.9
1979	30.8	24.8	24.9	6.6	5.1	7.8	100.0

•Total may not equal 100.0 due to rounding.
Source: 1955-1977 reprinted from *Arizona Business*, February 1979. Calculated from Arizona Power Authority data.

TABLE 2

ARIZONA ELECTRICAL POWER SALES
(In Thousands of Kilowatt Hours)

	Total Sales	*Residential Sales Per Household*
1970	15,602,200	7,500
1971	17,074,400	8,000
1972	19,251,200	8,700
1973	20,905,900	9,400
1974	23,132,500	9,250
1975	23,523,900	9,350
1976	24,663,400	9,050
1977	25,848,300	9,350
1978	27,157,900	9,100
1979	28,296,500	9,100
1980•	30,572,000	9,500

•projected
Source: Arizona electrical power sales from the Arizona Power Authority. Number of households estimated from 1970 Census data, U.S. Department of Commerce and *Inside Phoenix* data, various years, published by Phoenix Newspapers Inc.

the same time of the first energy crisis, which is considerably more usage than in years just prior to 1973. So far in 1980 (through September), electrical sales per customer are at the highest level ever. Hot summertime temperatures explain only a portion of this increase in usage. It appears that the more abundant supply of energy and the relatively slower price increases of the last couple of years have resulted in somewhat greater usage of electrical power per customer.

An increase in electrical power usage per customer has strong implications for future power requirements, particularly in the peak summer months. Electrical power sales in Arizona are quite seasonal, but in a pattern different from that of most of the country. In Arizona, demand for electrical power is heavy in the summer, particularly in July and August. The months of November through April tend to have relatively less demand. This seasonality, caused primarily by weather conditions, means that electrical generators must have a large capacity to meet the summer demand, thus leaving substantial unused capacity during most of the other months. As electrical power sales in Arizona have grown, the difference in sales between the summer months and the winter months has also been increasing, representing an increase in unused capacity in the winter months.

A review of electrical power sales is important for two reasons. First, electrical sales indicate the condition of certain aspects of the economy by reflecting the number and mix of residential, commercial, industrial, and agricultural customers as well as the electrical usage per customer. Second, electrical power sales have become increasingly important due to the cost and shortage of energy. Planning for energy needs must include a forecast of both the growth of the state and the power usage per customer. The current increase in the usage of electrical power per customer is important in determining these future power requirements.

A Survey of Arizona Business Conditions

HAROLD FEARON

The economic recovery is off and running, according to results from the October monthly business survey of the Purchasing Management Association of Arizona. The key indicators of new orders received, production, and employment were all positive for the second month in a row, showing that Arizona is back on the growth track again. The low point of the recession was in July, and the economy has been building momentum each month since.

The purchasing business survey is in its nineteenth year of consecutive monthly reporting on the current status of the Arizona economy. Data are gathered through a questionnaire sent at the close of each month to purchasing managers throughout the state, asking them to indicate the direction of activity—higher, unchanged, or lower—on six key indicators of economic activity in the month just ended. Since these purchasing managers deal daily with the forces of supply and demand, they are in a prime position to provide timely and accurate information on current business trends, which enables economic turning points to be spotted.

Prices paid for major purchased items continued to increase in October at a higher rate than in September, and at the highest month-to-month increase rate since last April. Higher prices were reported by 59 percent of the purchasing managers, 37 percent said prices were unchanged, and 4 percent paid lower prices in October than in September. The low point in the inflation rate was in August, and it has been intensifying in each of the two months since. The recession in Arizona was neither long nor severe enough to reduce inflation to an acceptable level, and it is likely to get worse over the balance of the year and into 1981.

Delivery time on shipments from vendors continued to stretch out, and at a rate twice as great as in September. Faster deliveries were reported by 12 percent of the firms, but about twice as many firms (27 percent) saw a slowdown in vendor delivery performance. Since the three months showing shorter delivery times (May through July), vendor service times have gone up at an increasing rate in August, September, and October as the economy continues to build up a head of steam in the recovery.

Inventory levels of purchased materials stabilized in October after six consecutive monthly declines. While 29 percent of managers added to stocks, 30 percent cut inventory, showing that inventory liquidations have about ended. Inventory levels will likely increase in each of the next several months, as firms begin to build stocks back up to levels needed to service the higher operating rates now required to meet customer demand.

New orders went up again, for the third consecutive month, and at a rate consistent with that in September. A higher new order rate was reported by 24 percent of the firms, compared to only 22 percent who saw a decline in the rate at which new business was booked.

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The Arizona economy definitely has turned the corner, after four down months in April through July, and is moving up at a good pace in the fourth quarter.

Production increased strongly in October, with a net increase rate almost three times as great as in September. The survey shows 34 percent raised output; only 17 percent cut production in October. This was the third consecutive monthly increase, following on the heels of four monthly declines, and was the largest increase since last October. The strong upswing in production is a reaction to the stronger new order picture which should continue over the next several months.

Employment in Arizona firms registered a good jump for the second month in a row. The net increase rate in October was over twice as great as in September. Higher employment was reported by 25 percent of the firms, compared to only 13 percent who pared payrolls. The October net increase was the largest since last January. Employment turned positive about a month later than both new orders and production; this lag is typical when the economy begins to pull out of a slump.

The latest crop of figures confirm again that business activity is on the rise, and that the Arizona economy weathered a short and shallow recession without any serious, long-term effects. The recovery is well under way and should continue through the fourth quarter and into the new year.

TABLE 1
OCTOBER PURCHASING SURVEY

	Percent of Purchasing Managers Indicating Each Response (October compared to September)		
Key Indicators	*Higher*	*Same*	*Lower*
Prices paid for major commodities	59	37	4
Delivery time from vendors	27	61	12
Purchased materials inventory level	29	41	30
New orders received	34	44	22
Production	34	49	17
Employment	25	62	13

Source: Survey of the Purchasing Management Association of Arizona.

ARIZONA SALES OF ELECTRICAL POWER
By Months
(In millions of kwh)

	Actual		*Percent Change Current Month From*	
	1980	*1979*	*Same Month Previous Year*	*Previous Month*
September	2,670.9	2,833.7	-5.75	-15.63

Source: Based on reports from major suppliers.

Arizona Construction Activity: Quarterly Report

JAY Q. BUTLER

THIRD QUARTER, 1980

Although increasing indications of economic improvement have been observed, the negative factors of rising interest rates and inflation still persist. Interest rates began to increase again in August with no signs of any appreciable decline for the remainder of 1980 or even early 1981. Inflation, which had shown signs of easing, has again moved into the double-digit range, largely due to increasing food prices. Both forces create a significant drag on the economy, but neither show signs of abating in the near future. Thus, a sluggish economic recovery is expected to persist well into 1981.

During the early part of the third quarter, interest and inflation rates appeared to be declining. In response to this positive economic condition, the residential sector led total construction activity in Maricopa County to a 32 percent increase over the second quarter—from $315,046,223 to $415,839,592, a level that is comparable to one year ago when it was $412,105,218.

For the remainder of Arizona, total construction activity was $269,800,796, representing a 40 percent increase over the second quarter ($191,979,597), and a 5 percent increase over a year ago ($257,209,094).

While residential activity intensified significantly, the commercial and industrial sectors were relatively stagnant. Tables 1 and 2 show the activity in the various sectors over the past seven quarters.

Residential Sector

Maricopa County. Because many people felt the economic climate was improving, residential activity in Maricopa County showed a 62 percent increase to 7,336 permits from the 4,518 permits of the second quarter. This is a 5 percent increase over the third quarter of 1979 (7,014 permits). The value of residential construction activity ($203,725,518) appreciated significantly with a 158 percent increase over the $79,844,790 recorded in

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TABLE 1

ARIZONA QUARTERLY HOUSING STARTS

	BUILDING PERMITS ISSUED				
	1* Family	Duplex	3-4 Families	5 or More	Housing Units
1979					
FIRST QUARTER					
Maricopa County	7,228	17	58	186	10,650
Rest of State	4,481	49	27	16	5,100
Arizona Total	11,790	66	85	202	15,750
SECOND QUARTER					
Maricopa County	8,227	69	110	84	11,944
Rest of State	6,291	30	30	21	7,257
Arizona Total	14,518	99	140	105	19,201
THIRD QUARTER					
Maricopa County	5,019	40	48	177	9,389
Rest of State	5,341	46	34	39	7,621
Arizona Total	10,360	86	82	216	17,010
FOURTH QUARTER					
Maricopa County	3,654	48	54	71	6,256
Rest of State	4,220	39	26	32	5,560
Arizona Total	7,874	87	80	103	11,822
1980					
FIRST QUARTER					
Maricopa County	3,418	28	42	105	6,320
Rest of State	3,452	32	42	12	4,204
Arizona Total	6,870	60	84	117	10,524
SECOND QUARTER					
Maricopa County	2,234	54	86	77	4,729
Rest of State	3,395	38	25	21	4,128
Arizona Total	5,629	92	111	98	8,857
THIRD QUARTER					
Maricopa County	5,397	51	47	78	7,692
Rest of State	4,336	41	43	32	4,962
Arizona Total	9,733	92	90	110	12,654

*Includes mobile homes.

Source: Compiled from data published in *Arizona Business*, Bureau of Business and Economic Research, College of Business Administration, Arizona State University.

the second quarter, and a 25 percent increase above the $163,059,602 posted a year ago.

The single-family housing sector (including mobile homes)increased 141 percent from the second quarter (2,234 to 5,397 permits), and 8 percent above the 5,019 permits of a year ago. The resurgence in the single-family sector is shown by the fact that it accounted for only 50 percent of total residential permits issued in the second quarter, but rose to a more typical 74 percent in the third quarter. Although total quarterly activity showed an increase, the monthly single-family sector activity reveals a declining trend: July, 1,799 permits; August, 1,967 permits; and September, 1,631 permits. These levels are well above those in the early months of 1980, but a continued decline is expected in response to higher interest rates and uncertain economic conditions.

All Other Arizona Counties. Because the rest of Arizona did not suffer the same decline as Maricopa County, the resurgence in residential activity was not as strong. The 6,752 permits issued represented a 2 percent increase over the 6,590 permits of the second quarter, but a 25 percent decline from the 9,030 permits of a year ago. The single-family segment increased from 51 percent to 64 percent of total residential activity. The recorded dollar value of $167,628,708 was a 62 percent increase over the $103,542,039 of the second quarter and an 8 percent increase from the of a year ago.

The 4,336 single-family permits (including mobile homes) was a 27 percent increase over the second quarter (3,395 permits) but an 18 percent decline from a year ago (5,341 permits). On a month-by-month basis for the third quarter, a very stable pattern was shown: July, 1,498 permits; August, 1,365 permits; and September, 1,440 permits. Pima County reported 1,725 single-family permits (40 percent of the total in Arizona) which was a 34 percent increase over the 1,284 permits of the second quarter, but a 31 percent increase from the 2,488 permits of a year ago. Comparable patterns of single-family construction activity can be found in Coconino, Mohave, and Yavapai counties.

Commercial Sector

Maricopa County. In the third quarter, contrary to previous quarters, the commercial sector posted a decline while the residential sector was increasing. The 393 recorded commercial permits represented a 47 percent decline from the 738 permits of the second quarter, and a 30 percent decrease from the 564 permits of the third quarter of 1979. Because many smaller projects were granted permits in the second quarter, the dollar value only declined 25 percent ($134,559,233 to

TABLE 2

ARIZONA QUARTERLY BUILDING PERMIT ACTIVITY

		RESIDENTIAL		*COMMERCIAL*		*INDUSTRIAL*		*OTHER*		*TOTAL*	
		Number of Permits	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*
1979	FIRST QUARTER										
	Maricopa County	9,519	207,680,328	568	99,325,216	108	13,227,668	5,826	86,687,577	16,021	406,920,789
	Rest of State	8,550	126,721,479	313	35,557,067	32	40,806,011	2,348	23,441,380	11,043	224,525,937
	Arizona Total	17,869	334,401,807	881	132,882,283	140	54,033,679	8,174	110,128,957	27,064	631,446,726
	SECOND QUARTER										
	Maricopa County	10,593	245,886,557	563	107,706,741	114	31,598,095	7,239	58,649,086	18,509	443,840,479
	Rest of State	10,801	177,943,784	413	83,445,863	21	5,166,240	2,700	35,144,970	13,935	302,700,857
	Arizona Total	21,394	423,830,341	976	191,152,604	135	36,764,335	9,934	94,794,056	32,444	746,541,336
	THIRD QUARTER										
	Maricopa County	7,014	163,059,602	564	129,297,596	163	43,106,632	5,908	76,641,388	13,649	412,105,218
	Rest of State	9,030	154,644,619	363	70,701,365	27	3,631,771	2,945	28,231,341	12,365	257,209,094
	Arizona Total	16,044	317,704,221	927	199,998,959	190	46,738,403	8,853	104,872,729	26,014	669,314,312
	FOURTH QUARTER										
	Maricopa County	5,864	134,935,967	512	128,226,226	127	40,249,131	5,281	57,274,578	11,784	360,685,902
	Rest of State	7,408	118,051,966	411	73,966,907	9	658,963	2,109	20,254,659	9,937	212,932,495
	Arizona Total	13,272	252,987,933	923	202,193,133	136	40,908,094	7,390	77,529,236	21,721	573,618,397
1980	FIRST QUARTER										
	Maricopa County	6,173	120,797,718	510	123,606,604	149	42,596,153	5,575	60,706,632	12,407	347,707,107
	Rest of State	6,694	97,272,425	355	75,441,664	14	5,444,490	2,419	21,996,869	9,482	196,155,448
	Arizona Total	12,867	218,070,143	865	197,048,268	163	46,040,643	7,994	82,703,501	21,889	543,862,555
	SECOND QUARTER										
	Maricopa County	4,518	79,844,790	738	134,559,233	128	35,247,376	4,698	65,394,824	10,082	315,046,223
	Rest of State	6,590	103,542,039	390	56,573,186	25	5,313,236	3,068	26,551,156	10,073	191,979,597
	Arizona Total	11,108	183,386,829	1,128	191,132,399	153	40,560,612	7,766	91,945,980	20,155	507,025,820
	THIRD QUARTER										
	Maricopa County	7,336	203,725,518	393	101,005,229	148	30,546,533	5,183	80,562,312	13,060	415,839,592
	Rest of State	6,752	167,628,708	379	50,695,501	14	1,137,750	3,274	50,338,837	10,419	269,800,796
	Arizona Total	14,088	371,354,226	772	151,700,730	162	31,684,283	8,457	130,901,149	23,479	685,640,388

Source: Compiled from data published in *Arizona Business*, Bureau of Business and Economic Research, College of Business Administration, Arizona State University.

$101,005,229) and 22 percent from a year ago ($129,297,596 to $101,005,229).

Although apartment construction of five or more units declined 56 percent (177 to 78 permits) from a year ago, it is comparable to the 77 permits of the second quarter. For the last year, each five-or-more-unit permit has typically represented 23 to 25 housing units. The primary area of decline in the commercial sector can be attributed to a reduction in the number of office and shopping center developments.

All Other Arizona Counties. The rest of Arizona tends to have a smaller economic base, thus commercial development activity is not as volatile. The 379 permits issued represented a 3 percent decline from the second quarter (390 permits), but a 4 percent increase over the 363 permits of a year ago. The $50,695,500 in recorded dollar value is an 11 percent decline from the $56,573,166 of the second quarter and a 28 percent decline from the $70,701,363 of the third quarter of 1979.

Apartment development was up appreciably over the second quarter (by 21 permits) with 32 permits, 18 permits of which were in Pima County. Pima and Mohave counties again posted good levels of commercial performance, and Coconino County recorded a 400 percent increase in dollar value ($888,081 to $4,740,249).

Industrial Sector

Maricopa County. Industrial development continued with very stable performance, especially in consideration of the economic conditions. The 148 permits is a 12 percent increase (128 to 148 permits) over the second quarter, but a 9 percent decrease over the 163 permits issued last year. Because some of the current activity is in developing the shells for smaller warehouses, the $30,546,533 in recorded dollar value is down 11 percent for the preceding quarter ($35,247,376), and down 28 percent from a year ago ($43,106,632). Given the current economic climate, industrial activity is especially good and is needed to support continued economic development. The main geographical areas of development continued to be Phoenix: 41 permits at $13,571,251; and Tempe: 92 permits at $13,676,400.

All Other Arizona Counties. Like the commercial sector, industrial development is very limited. Reports of activity can be greatly affected by one or two projects, such as the IBM development in Pima County.

In the third quarter, only 14 permits (valued at $1,137,750) were recorded. This represents a 44 percent decline in issued permits (25 permits) and an 80 percent decline in dollar value ($5,313,236). No large projects were recorded and most of the activity was scattered.

LOOKING AHEAD

One of the main questions is the impact that the new administration will have on the economy. No specific programs have been announced nor could any be determined at this time, but the business community has great expectations that the new administration will have a positive effect on the economy. Because decisions are based not only on what is, but also on what is expected, a more positive outlook can be expected relative to investment and purchase decisions. However, one should not be overly optimistic for the short term because most economists foresee conditions remaining unchanged for at least the next six months.

The dual forces of rising inflation and higher interest rates adversely affect all aspects of the real estate industry. In the commercial and industrial sectors, these forces increase construction and operating costs, but because rent levels have remained fairly stable, new developments are not very attractive. Once the economy is perceived as being more sound and interest rates decrease, there should be a very definitive resurgence in construction activity—first in Maricopa County, then spreading throughout the state.

In the residential sector, the affordability of new homes remains a serious question. During the 1970s, new homes were purchased through the contribution of a second wage earner and by rearrangement of household spending patterns, but the impact of these household modifications may have run its course. Thus, consumers are showing increasing interest in various methods of producing more affordable homes.

A recent survey of homebuilders and the general public, conducted by the Bureau of Business and Economic Research and sponsored by Phoenix Magazine Publishing, Inc., showed some divergence of opinion on ways to make homes more affordable. Homebuilders tended to favor the methods of decreasing house size and lot size, while the general public ranked these methods relatively low. Both homebuilders and the general public agreed that having homes prefabricated in a factory is an unacceptable method. The most acceptable method for both surveyed groups concerned the proposal to build homes that can be enlarged, if desired, at a later time.

Continued inflation can be expected to lead the Federal Reserve to tighten credit, pushing interest rates even higher. Because of sluggish economic conditions, the recovery in the construction industry should not really begin until well into 1981. The overall uncertainties concerning economic activity suggest that the real estate market activity could be very inconsistent through-out most of 1981.

Arizona New Housing Starts: Quarterly Report

THIRD QUARTER, 1980

	BUILDING PERMITS ISSUED				
	1* Family	Duplex	3-4 Families	5 or More	Housing Units
APACHE COUNTY	39	—	—	—	39
Eagar	11	—	—	—	11
St. Johns	12	—	—	—	12
Springerville	5	—	—	—	5
Uninc. Apache Co.	11	—	—	—	11
COCHISE COUNTY	230	—	—	—	230
Benson	6	—	—	—	6
Bisbee	—	—	—	—	—
Douglas	10	—	—	—	10
Huachuca City	3	—	—	—	3
Sierra Vista	96	—	—	—	96
Tombstone	3	—	—	—	3
Uninc. Cochise Co.	104	—	—	—	104
Willcox	8	—	—	—	8
COCONINO COUNTY	364	6	1	1	390
Flagstaff	91	6	—	1	113
Fredonia	6	—	—	—	6
Page	41	—	—	—	41
Uninc. Coconino Co.	224	—	1	—	228
Williams	2	—	—	—	2
GILA COUNTY	148	2	—	1	157
Globe	7	1	—	—	9
Hayden	—	—	—	—	—
Miami	—	—	—	—	—
Payson	57	1	—	1	64
Uninc. Gila Co.	84	—	—	—	84
GRAHAM COUNTY	70	—	—	—	70
Pima	6	—	—	—	6
Safford	6	—	—	—	6
Thatcher	6	—	—	—	6
Uninc. Graham Co.	52	—	—	—	52
GREENLEE COUNTY	1	—	—	—	1
Clifton	1	—	—	—	1
Duncan	—	—	—	—	—
Uninc. Greenlee Co.	—	—	—	—	—
MARICOPA COUNTY	5,397	51	47	78	7,692
Avondale	11	—	—	—	11
Buckeye	2	—	—	—	2
Chandler	576	1	7	—	606
El Mirage	—	—	—	—	—
Gila Bend	2	—	—	—	2
Gilbert	38	—	—	—	38
Glendale	420	—	—	13	516
Goodyear	—	—	—	—	—
Guadalupe	2	—	—	—	2
Mesa	655	40	5	11	1,116
Paradise Valley	30	—	—	—	30
Peoria	120	—	—	—	120
Phoenix	1,832	9	20	32	3,215
Scottsdale	287	—	—	11	441
Surprise	4	—	—	—	4
Tempe	247	1	10	11	398
Tolleson	—	—	—	—	—
Uninc. Maricopa Co.	1,165	—	5	—	1,185
Wickenburg	6	—	—	—	6
Youngtown	—	—	—	—	—

	BUILDING PERMITS ISSUED				
	1* Family	Duplex	3-4 Families	5 or More	Housing Units
MOHAVE COUNTY	551	5	5	4	620
Kingman City	42	—	—	—	42
Kingman Area	86	—	3	—	98
Lake Havasu City	130	—	2	4	201
Lake Havasu Area	21	—	—	—	21
Mohave Valley North	129	3	—	—	135
Mohave Valley South	71	—	—	—	71
Dolan Springs	25	—	—	—	25
Sacramento Valley	17	—	—	—	17
Mohave Co. General	10	—	—	—	10
NAVAJO COUNTY	279	2	—	2	303
Holbrook	6	—	—	—	6
Show Low	24	—	—	—	24
Snowflake	11	—	—	—	11
Taylor	6	—	—	—	6
Uninc. Navajo Co.	226	—	—	—	226
Winslow	6	2	—	2	30
PIMA COUNTY	1,726	25	16	18	2,076
Marana	2	—	—	—	2
Oro Valley	4	—	—	—	4
South Tucson	3	—	—	—	3
Tucson	515	19	16	17	848
Uninc. Pima Co.	1,202	6	—	1	1,219
PINAL COUNTY	181	—	10	—	220
Casa Grande	39	—	3	—	50
Coolidge	17	—	—	—	17
Eloy	—	—	—	—	—
Florence	—	—	—	—	—
Kearny	4	—	—	—	4
Mammoth	1	—	—	—	1
Superior	3	—	—	—	3
Uninc. Pinal Co.	117	—	7	—	145
SANTA CRUZ COUNTY	38	—	—	—	38
Nogales	N/R	N/R	N/R	N/R	N/R
Patagonia	2	—	—	—	2
Uninc. Santa Cruz Co.	36	—	—	—	36
YAVAPAI COUNTY	490	2	5	4	539
Chino Valley	35	—	—	1	41
Clarkdale	3	—	—	—	3
Cottonwood	14	—	—	—	14
Jerome	—	—	—	—	—
Prescott	58	—	3	1	78
Uninc. Yavapai Co.	302	—	—	2	315
Prescott Valley	78	2	2	—	88
YUMA COUNTY	239	3	6	2	279
Parker	—	—	—	—	—
Somerton	5	—	—	—	5
Uninc. Yuma Co.	124	1	—	1	132
Wellton	—	—	—	—	—
Yuma	110	2	6	1	142
TOTAL, Maricopa Co., Third Quarter 1980	5,397	51	47	78	7,692
TOTAL, Maricopa Co., Third Quarter 1979	5,019	40	48	177	9,389
PERCENT CHANGE	8	27	-2	-56	-18
TOTAL, Arizona, Third Quarter, 1980	9,735	92	90	110	12,654
TOTAL, Arizona, Third Quarter, 1979	10,360	86	82	216	17,010
PERCENT CHANGE	-6	7	10	-49	-26

*Includes mobile homes.

N/R: No report

Arizona Building Permits: Quarterly Report

THIRD QUARTER, 1980	RESIDENTIAL*		COMMERCIAL		INDUSTRIAL		OTHER		TOTAL	
	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permit	Dollar Value
APACHE COUNTY	46	834,610	—	—	—	—	2	41,000	48	875,610
Eagar	14	432,700	—	—	—	—	1	1,000	15	433,700
St. Johns	13	N/C	—	—	—	—	—	—	13	N/C
Springerville	6	N/C	—	—	—	—	—	—	6	N/C
Uninc. Apache County	13	401,910	—	—	—	—	1	40,000	14	441,910
COCHISE COUNTY	379	8,362,392	21	1,481,083	—	—	310	831,147	710	10,674,622
Benson	10	214,020	4	437,800	—	—	14	40,990	28	692,810
Bisbee	49	42,100	—	—	—	—	24	120,031	73	162,131
Douglas	51	936,041	2	757,426	—	—	43	109,707	76	1,803,174
Huachuca City	19	105,934	1	10,000	—	—	4	23,700	24	139,634
Sierra Vista	130	3,369,154	4	66,157	—	—	180	232,216	314	3,667,527
Tombstone	5	6,550	1	15,000	—	—	7	3,315	13	24,865
Uninc. Cochise Co.	119	3,308,138	7	145,700	—	—	36	290,188	162	3,744,026
Wilcox	16	380,455	2	49,000	—	—	2	11,000	20	440,455
COCONINO COUNTY	714	14,069,843	34	4,740,249	3	137,750	151	22,693,997	902	41,641,839
Flagstaff	175	5,953,053	24	3,144,526	—	—	78	22,492,921	277	31,590,300
Fredonia	8	7,600	—	—	3	137,750	9	19,500	20	164,850
Page	65	913,976	3	7,400	—	—	22	64,000	90	985,376
Uninc. Coconino Co.	460	7,170,416	6	1,578,523	—	—	9	81,632	475	8,830,571
Williams	6	24,798	1	10,000	—	—	33	35,944	40	70,742
GILA COUNTY	238	3,180,095	17	375,824	—	—	82	222,366	337	3,778,285
Globe	26	286,650	—	—	—	—	12	88,450	38	375,100
Hayden	1	37,535	—	—	—	—	—	—	1	37,535
Miami	10	18,000	1	25,000	—	—	1	500	12	43,500
Payson	89	889,345	14	309,357	—	—	59	118,016	162	1,316,718
Uninc. Gila Co.	112	1,948,565	2	41,467	—	—	10	15,400	124	2,005,432
GRAHAM COUNTY	123	1,699,505	6	611,000	1	7,000	12	357,050	142	2,674,555
Pima	6	113,090	—	—	—	—	—	—	6	113,090
Safford	31	382,425	4	201,000	1	7,000	8	148,050	44	738,475
Thatcher	20	346,500	1	260,000	—	—	2	9,000	23	615,500
Uninc. Graham Co.	66	857,490	1	150,000	—	—	2	200,000	69	1,207,490
GREENLEE COUNTY	3	9,000	—	—	1	10,000	1	400	5	19,400
Clifton	1	N/C	—	—	—	—	—	—	1	N/C
Duncan	2	9,000	—	—	1	10,000	1	400	4	19,400
Uninc. Greenlee Co.	—	—	—	—	—	—	—	—	—	—
MARICOPA COUNTY	7,336	203,725,518	393	101,005,229	148	30,546,533	5,183	80,562,312	13,060	415,839,592
Avondale	13	157,900	2	66,000	—	—	28	137,444	43	361,344
Buckeye	6	40,700	—	—	—	—	5	28,630	11	69,330
Chandler	633	18,086,998	10	874,560	7	1,829,737	653	3,754,811	1,303	24,546,106
El Mirage	2	3,500	—	—	—	—	—	—	2	3,500
Gila Bend	2	41,000	—	—	—	—	—	—	2	41,000
Gilbert	55	1,865,172	2	325,000	2	145,000	61	179,148	120	2,514,320
Glendale	526	14,917,316	43	5,393,900	—	—	656	2,324,633	1,225	22,635,849
Goodyear	—	—	1	150,000	—	—	28	913,052	29	1,063,052
Guadalupe	5	38,100	—	—	—	—	—	—	5	38,100
Mesa	780	13,961,089	64	15,086,043	3	1,290,775	718	8,257,931	1,565	38,595,838
Paradise Valley	73	4,045,008	—	—	—	—	108	719,454	181	4,764,462
Peoria	139	3,090,820	4	151,200	3	33,370	49	355,133	195	3,630,523
Phoenix	2,608	85,516,033	112	54,429,139	41	13,571,251	1,710	52,625,624	4,471	206,142,047
Scottsdale	389	17,006,013	43	14,615,497	—	—	560	3,464,581	992	35,086,091
Surprise	10	48,330	1	72,000	—	—	13	27,950	24	148,280
Tempe	354	9,769,000	58	4,323,000	92	13,676,400	243	4,244,400	747	32,012,800
Tolleson	16	31,566	1	200	—	—	7	18,575	24	50,341
Uninc. Maricopa Co.	1,672	34,845,122	52	5,518,690	—	—	328	3,358,290	2,052	43,722,102
Wickenburg	7	215,200	—	—	—	—	1	14,450	8	229,650
Youngtown	46	46,651	—	—	—	—	15	138,206	61	184,857

Arizona Building Permits: Quarterly Report (Continued)

THIRD QUARTER, 1980	RESIDENTIAL*		COMMERCIAL		INDUSTRIAL		OTHER		TOTAL	
	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permit	Dollar Value
MOHAVE COUNTY	882	13,669,520	74	3,392,256	—	—	661	1,463,040	1,617	18,524,816
Kingman City	77	1,639,038	13	553,800	—	—	18	23,116	108	2,215,954
Kingman Area	133	1,233,331	5	197,088	—	—	119	103,596	257	1,534,015
Lake Havasu City	160	5,041,509	16	1,749,557	—	—	50	299,685	226	7,090,751
Lake Havasu Area	36	356,610	1	24,960	—	—	38	59,877	75	441,447
Mohave Valley North	263	3,005,439	32	638,046	—	—	262	654,330	557	4,297,815
Mohave Valley South	118	1,480,062	6	226,405	—	—	95	215,684	219	1,922,151
Dolan Springs	42	377,441	—	—	—	—	47	68,028	89	445,469
Sacramento Valley	32	325,564	—	—	—	—	28	34,729	60	360,293
Mohave County General	21	210,526	2	2400	—	—	4	3,995	26	216,921
NAVAJO COUNTY	454	7,795,324	20	1,787,407	—	—	27	1,052,330	501	10,635,061
Holbrook	21	342,700	—	—	—	—	4	53,000	25	395,700
Show Low	29	353,282	6	490,570	—	—	3	58,868	38	902,720
Snowflake	11	N/C	—	—	—	—	8	—	19	N/C
Taylor	9	284,500	—	—	—	—	—	—	9	284,500
Unic. Navajo Co.	367	6,545,342	12	896,837	—	—	4	120,562	383	7,562,741
Winslow	17	269,500	2	400,000	—	—	8	819,900	27	1,489,400
PIMA COUNTY	2,393	79,001,069	123	33,573,002	1	800,000	1,535	16,621,108	4,052	129,995,179
Marana	3	N/C	—	—	—	—	—	—	3	N/C
Oro Valley	4	220,000	—	—	—	—	—	—	4	220,000
South Tucson	32	145,424	2	3,500	—	—	1	—	35	148,924
Tucson	884	18,577,242	85	23,907,802	1	800,000	704	12,276,358	1,674	55,561,402
Uninc. Pima Co.	1,470	60,058,403	36	9,661,700	—	—	830	4,344,750	2,336	74,064,853
PINAL COUNTY	299	13,386,322	21	901,944	3	14,000	130	4,881,368	453	19,183,634
Casa Grande	52	1,934,321	5	378,084	—	—	34	191,552	91	2,503,957
Coolidge	47	243,649	—	—	—	—	5	32,150	52	275,799
Eloy	12	8,809,057	—	—	—	—	6	4,149,479	18	12,958,536
Florence	5	200,250	1	5,000	—	—	14	33,475	20	238,725
Kearny	10	117,550	1	20,000	3	14,000	4	51,400	18	202,950
Mammoth	3	41,500	1	55,000	—	—	—	—	4	96,500
Superior	7	9,500	1	5,000	—	—	5	3,700	13	18,200
Uninc. Pinal Co.	163	2,030,495	12	438,860	—	—	62	419,612	237	2,888,967
SANTA CRUZ COUNTY	43	1,873,465	—	—	—	—	12	184,931	55	2,058,396
Nogales	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Patagonia	2	60,000	—	—	—	—	4	3,850	6	63,850
Uninc. Santa Cruz Co.	41	1,813,465	—	—	—	—	8	181,081	49	1,994,546
YAVAPAI COUNTY	796	15,257,239	45	2,547,721	5	169,000	259	779,774	1,105	18,753,734
Chino Valley	63	794,456	3	61,500	—	—	28	73,510	94	929,466
Clarkdale	14	107,180	—	—	—	—	—	—	14	107,180
Cottonwood	49	300,915	4	64,000	2	27,000	5	2,987	60	394,902
Jerome	—	—	1	6,000	—	—	—	—	1	6,000
Prescott	148	1,950,218	14	1,085,437	—	—	145	325,913	307	3,361,568
Uninc. Yavapai Co.	415	10,455,648	17	1,155,560	1	30,000	80	367,764	513	12,008,972
Prescott Valley	107	1,648,822	6	175,224	2	112,000	1	9,600	116	1,945,646
YUMA COUNTY	382	8,490,324	18	1,285,015	—	—	92	1,210,326	492	10,985,665
Parker	2	16,600	1	12,000	—	—	3	5,300	6	33,900
Somerton	7	194,300	1	2,500	—	—	5	4,300	13	201,100
Uninc. Yuma Co.	184	3,529,232	6	504,230	—	—	19	564,130	209	4,597,592
Wellton	—	—	—	—	—	—	—	—	—	—
Yuma	189	4,750,192	10	766,285	—	—	65	636,596	264	6,153,073
TOTAL Maricopa County, Third Quarter, 1980	7,336	203,725,518	393	101,005,229	148	30,546,533	5,183	80,562,312	13,060	415,839,592
TOTAL Maricopa County, Third Quarter, 1979	7,014	163,059,602	564	129,297,596	163	43,106,632	5,908	76,641,388	13,649	412,105,218
PERCENT CHANGE	5.	25.	-30	-22	-9	-29	-12	5	-4	1
TOTAL Arizona, Third Quarter, 1980	14,088	371,354,226	772	151,700,730	162	31,684,283	8,457	130,901,149	23,479	685,640,388
TOTAL Arizona, Third Quarter, 1979	16,044	317,704,221	927	199,998,959	190	46,738,403	8,853	104,872,729	26,014	669,314,312
PERCENT CHANGE	-12	17	-17	-24	-15	-32	-4	25	-10	2

N/C: Not collected.

N/R: No report; data for this month will be combined with data reported for the following month.

*Includes mobile homes.

SEPTEMBER, 1980

Arizona Building Permits: Monthly Report

CENSUS DIVISION	RESIDENTIAL* Number of Permits	RESIDENTIAL* Dollar Value	COMMERCIAL Number of Permits	COMMERCIAL Dollar Value	INDUSTRIAL Number of Permits	INDUSTRIAL Dollar Value	OTHER Number of Permits	OTHER Dollar Value	TOTAL Number of Permit	TOTAL Dollar Value
APACHE COUNTY	19	251,410	—	—	—	—	1	40,000	20	291,410
Eagar	4	110,000	—	—	—	—	—	—	4	110,000
St. Johns	9	N/C	—	—	—	—	—	—	9	—
Springerville	3	N/C	—	—	—	—	—	—	3	—
Uninc. Apache County	3	141,410	—	—	—	—	1	40,000	4	181,410
COCHISE COUNTY	116	2,546,428	4	479,300	—	—	81	171,799	201	3,197,527
Benson	4	85,290	2	423,800	—	—	7	11,790	13	520,790
Bisbee	21	21,084	—	—	—	—	—	—	21	21,084
Douglas	10	297,675	—	—	—	—	11	44,702	21	342,377
Huachuca City	2	560	—	—	—	—	—	—	2	560
Sierra Vista	27	669,270	1	9,500	—	—	53	69,601	81	748,371
Tombstone	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Uninc. Cochise Co.	45	1,338,759	1	46,000	—	—	9	35,706	55	1,420,465
Willcox	7	133,880	—	—	—	—	1	10,000	8	143,880
COCONINO COUNTY	230	5,544,490	18	1,576,882	2	137,000	63	627,609	313	7,885,981
Flagstaff	36	1,984,923	12	1,415,282	—	—	36	582,843	84	3,983,098
Fredonia	1	—	—	—	2	137,000	4	2,000	7	139,000
Page	23	336,666	3	7,400	—	—	15	—	41	344,066
Uninc. Coconino Co.	165	3,200,037	2	144,200	—	—	2	32,000	169	3,376,237
Williams	5	22,864	1	10,000	—	—	6	10,766	12	43,580
GILA COUNTY	92	1,269,911	2	74,174	—	—	25	97,050	119	1,441,135
Globe	7	56,750	—	—	—	—	9	17,950	16	74,700
Hayden	1	37,535	—	—	—	—	—	—	1	37,535
Miami	6	11,600	1	25,000	—	—	—	—	7	36,600
Payson	30	309,127	1	49,174	—	—	16	79,100	47	437,401
Uninc. Gila Co.	48	854,899	—	—	—	—	—	—	48	854,899
GRAHAM COUNTY	42	537,382	2	265,500	—	—	4	144,700	48	947,582
Pima	1	36,790	—	—	—	—	—	—	1	36,790
Safford	7	74,800	1	5,500	—	—	4	144,700	12	225,000
Thatcher	9	159,500	1	260,000	—	—	—	—	10	419,300
Uninc. Graham Co.	25	266,492	—	—	—	—	—	—	25	266,492
GREENLEE COUNTY	—	—	—	—	—	—	—	—	—	—
Clifton	—	—	—	—	—	—	—	—	—	—
Duncan	—	—	—	—	—	—	—	—	—	—
Uninc. Greenlee Co.	—	—	—	—	—	—	—	—	—	—
MARICOPA COUNTY	2,269	62,718,126	133	43,165,478	57	6,926,398	1,526	35,891,987	3,985	148,701,999
Avondale	5	16,400	—	—	—	—	8	10,744	13	27,144
Buckeye	1	25,000	—	—	—	—	—	—	1	25,000
Chandler	157	4,313,484	2	220,000	4	402,568	158	481,037	321	5,417,089
El Mirage	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Gila Bend	—	—	—	—	—	—	—	—	—	—
Gilbert	7	74,902	2	325,000	1	140,000	19	41,225	29	580,927
Glendale	169	4,633,536	12	1,448,200	—	—	164	383,292	345	6,465,028
Goodyear	—	—	—	—	—	—	11	27,963	11	27,963
Guadalupe	—	—	—	—	—	—	—	—	—	—
Mesa	228	4,017,415	15	4,903,890	1	77,775	199	3,042,078	443	12,041,158
Paradise Valley	12	1,185,895	—	—	—	—	37	413,382	49	1,599,187
Peoria	33	758,491	—	—	1	1,800	17	72,937	51	833,228
Phoenix	837	26,465,789	40	23,183,117	13	4,598,055	524	29,354,234	1,414	83,599,195
Scottsdale	123	5,950,980	22	9,074,296	—	—	199	763,923	344	15,789,199
Surprise	7	23,120	—	—	—	—	3	1,050	10	24,180
Tempe	99	3,630,500	14	147,300	37	1,706,200	69	648,700	219	6,132,700
Tolleson	8	7,045	—	—	—	—	—	—	8	7,045
Uninc. Maricopa Co.	569	11,559,520	26	3,863,675	—	—	112	629,442	707	16,052,637
Wickenburg	2	48,000	—	—	—	—	1	14,450	3	62,450
Youngtown	12	10,329	—	—	—	—	5	7,530	17	17,869

Arizona Building Permits: Monthly Report (Continued)

SEPTEMBER, 1980	RESIDENTIAL*		COMMERCIAL		INDUSTRIAL		OTHER		TOTAL	
CENSUS DIVISION	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permit	Dollar Value
MOHAVE COUNTY	333	5,240,849	30	958,316	—	—	243	429,994	606	6,629,159
Kingman City	34	763,395	3	112,000	—	—	6	6,966	43	882,361
Kingman Area	36	378,961	1	32,256	—	—	28	28,793	65	440,010
Lake Havasu City	48	1,536,972	7	417,990	—	—	18	112,152	73	2,077,114
Lake Havasu Area	12	114,996	1	24,960	—	—	19	25,416	32	165,302
Mohave Valley North	123	1,331,826	15	277,510	—	—	104	160,497	242	1,869,843
Mohave Valley South	48	710,969	2	91,200	—	—	30	42,910	80	845,079
Dolan Springs	11	113,022	—	—	—	—	12	25,556	23	138,578
Sacramento Valley	18	146,752	—	—	—	—	22	23,709	40	170,461
Mohave County General	3	34,016	1	2,400	—	—	4	3,995	8	40,411
NAVAJO COUNTY	122	1,895,556	10	792,622	—	—	6	158,562	138	2,846,740
Holbrook	8	74,090	—	—	—	—	2	38,000	10	112,000
Show Low	10	183,714	4	258,570	—	—	—	—	14	442,284
Snowflake	2	N/C	—	—	—	—	—	—	2	—
Taylor	5	69,000	—	—	—	—	—	—	5	69,000
Uninc. Navajo Co.	91	1,548,342	4	134,052	—	—	4	120,562	99	1,802,956
Winslow	6	20,500	2	400,000	—	—	—	—	8	420,500
PIMA COUNTY	751	27,401,019	40	11,068,390	1	800,000	424	3,477,116	1,216	42,746,525
Marana	1	N/C	—	—	—	—	—	—	1	—
Oro Valley	1	90,000	—	—	—	—	—	—	1	90,000
South Tucson	14	16,150	—	—	—	—	1	—	15	16,150
Tucson	302	6,681,320	27	8,968,090	1	800,000	198	2,394,894	528	18,844,314
Uninc. Pima Co.	433	20,613,529	13	2,100,300	—	—	225	1,082,222	671	23,796,061
PINAL COUNTY	116	1,485,823	8	308,334	—	—	41	333,478	165	2,125,645
Casa Grande	22	816,429	2	153,974	—	—	8	41,901	32	1,012,314
Coolidge	25	130,888	—	—	—	—	2	7,750	27	138,638
Eloy	6	5,757	—	—	—	—	1	36,700	7	42,457
Florence	2	3,250	1	5,000	—	—	3	1,375	6	9,625
Kearny	3	2,300	1	20,000	—	—	1	25,000	5	47,300
Mammoth	1	N/C	—	—	—	—	—	—	1	—
Superior	4	7,500	—	—	—	—	3	1,800	7	9,300
Uninc. Pinal Co.	53	517,699	4	129,360	—	—	23	218,952	80	866,011
SANTA CRUZ COUNTY	21	791,793	—	—	—	—	2	14,200	23	805,998
Nogales	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Patagonia	1	30,000	—	—	—	—	1	200	2	30,200
Uninc. Santa Cruz Co.	20	761,798	—	—	—	—	1	14,000	21	775,798
YAVAPAI COUNTY	295	6,014,002	19	1,028,737	3	142,000	78	296,945	395	7,481,684
Chino Valley	24	313,940	—	—	—	—	4	7,300	28	321,240
Clarkdale	3	36,570	—	—	—	—	—	—	3	36,570
Cottonwood	15	108,383	1	7,000	—	—	3	2,450	19	117,833
Jerome**	—	—	1	6,000	—	—	—	—	1	6,000
Prescott	48	583,785	6	451,925	—	—	47	124,069	101	1,159,779
Uninc. Yavapai Co.	144	3,918,477	8	482,500	1	30,000	24	163,126	177	4,594,103
Prescott Valley***	61	1,052,847	3	81,312	2	112,000	—	—	66	1,246,159
YUMA COUNTY	134	3,244,872	6	581,091	—	—	21	235,902	161	4,061,865
Parker	—	—	1	12,000	—	—	—	—	1	12,000
Somerton	2	9,800	—	—	—	—	1	1,000	3	10,800
Uninc. Yuma Co.	78	1,776,446	—	—	—	—	6	92,220	84	1,868,666
Wellton	—	—	—	—	—	—	—	—	—	—
Yuma	54	1,458,626	5	569,091	—	—	14	142,682	73	2,170,399
TOTAL Maricopa County, Sept., 1980	2,269	62,718,136	133	43,165,478	57	6,926,398	1,526	35,891,987	3,985	148,701,999
TOTAL Maricopa County, Sept., 1979	2,027	44,626,098	170	35,916,731	46	21,219,928	1,695	31,587,390	3,938	133,350,147
PERCENT CHANGE	12	41	-22	20	24	-67	-10	14	1	12
TOTAL Arizona, Sept., 1980	4,540	118,939,686	272	60,298,824	63	8,005,398	2,515	41,919,342	7,390	229,163,250
TOTAL Arizona, Sept., 1979	4,699	89,824,258	286	57,582,063	54	22,559,808	2,911	37,372,018	7,950	207,338,147
PERCENT CHANGE	-3	32	-5	5	17	-65	-14	12	-7	11

N/C: Not Collected
N/R: No report; data for this month will be combined with data reported for the following month.
*Includes mobile homes.
**Jerome's total includes July and August
***Prescott Valley's totals include July, 1980

Arizona New Housing Starts: Monthly Report

SEPTEMBER, 1980

	BUILDING PERMITS ISSUED				
	1* Family	Duplex	3-4 Families	5 or More	Housing Units
APACHE COUNTY	17	—	—	—	17
Eagar	3	—	—	—	3
St. Johns	8	—	—	—	8
Springerville	3	—	—	—	3
Uninc. Apache Co.	3	—	—	—	3
COCHISE COUNTY	68	—	—	—	68
Benson	2	—	—	—	2
Bisbee	—	—	—	—	—
Douglas	1	—	—	—	1
Huachuca City	—	—	—	—	—
Sierra Vista	20	—	—	—	20
Tombstone	N/R	N/R	N/R	N/R	N/R
Uninc. Cochise Co.	42	—	—	—	42
Willcox	3	—	—	—	3
COCONINO COUNTY	127	6	—	1	149
Flagstaff	20	6	—	1	42
Fredonia	1	—	—	—	1
Page	15	—	—	—	15
Uninc. Coconino Co.	89	—	—	—	89
Williams	2	—	—	—	2
GILA COUNTY	63	—	—	—	63
Globe	2	—	—	—	2
Hayden	—	—	—	—	—
Miami	—	—	—	—	—
Payson	18	—	—	—	18
Uninc. Gila Co.	43	—	—	—	43
GRAHAM COUNTY	24	—	—	—	24
Pima	1	—	—	—	1
Safford	1	—	—	—	1
Thatcher	2	—	—	—	2
Uninc. Graham Co.	20	—	—	—	20
GREENLEE COUNTY	—	—	—	—	—
Clifton	—	—	—	—	—
Duncan	—	—	—	—	—
Uninc. Greenlee Co.	—	—	—	—	—
MARICOPA COUNTY	1,631	12	11	36	2,842
Avondale	4	—	—	—	4
Buckeye	1	—	—	—	1
Chandler	140	1	—	—	142
El Mirage	N/R	N/R	N/R	N/R	N/R
Gila Bend	—	—	—	—	—
Gilbert	1	—	—	—	1
Glendale	132	—	—	3	160
Goodyear	—	—	—	—	—
Guadalupe	—	—	—	—	—
Mesa	188	9	1	6	388
Paradise Valley	9	—	—	—	9
Peoria	29	—	—	—	29
Phoenix	567	2	4	21	1,450
Scottsdale	90	—	—	6	164
Surprise	2	—	—	—	2
Tempe	77	—	1	—	81
Tolleson	—	—	—	—	—
Uninc. Maricopa Co.	390	—	5	—	410
Wickenburg	1	—	—	—	1
Youngtown	—	—	—	—	—

*Includes mobil homes

**Prescott Valley's new housing starts includes July, 1980

	BUILDING PERMITS ISSUED				
	1* Family	Duplex	3-4 Families	5 or More	Housing Units
MOHAVE COUNTY	195	7	1	3	220
Kingman City	21	—	—	—	21
Kingman Area	23	—	1	—	27
Lake Havasu City	36	—	—	3	51
Lake Havasu Area	8	—	—	—	8
Mohave Valley North	58	2	—	—	64
Mohave Valley South	31	—	—	—	31
Dolan Springs	7	—	—	—	7
Sacramento Valley	8	—	—	—	8
Mohave Co. General	3	—	—	—	3
NAVAJO COUNTY	69	—	—	2	89
Holbrook	1	—	—	—	1
Show Low	10	—	—	—	10
Snowflake	2	—	—	—	2
Taylor	2	—	—	—	2
Uninc. Navajo Co.	53	—	—	—	53
Winslow	1	—	—	2	21
PIMA COUNTY	527	6	—	7	649
Marana	—	—	—	—	—
Oro Valley	1	—	—	—	1
South Tucson	—	—	—	—	—
Tucson	184	6	—	7	306
Uninc. Pima Co.	342	—	—	—	342
PINAL COUNTY	61	—	4	—	76
Casa Grande	13	—	2	—	20
Coolidge	8	—	—	—	8
Eloy	—	—	—	—	—
Florence	—	—	—	—	—
Kearny	—	—	—	—	—
Mammoth	—	—	—	—	—
Superior	1	—	—	—	1
Uninc. Pinal Co.	39	—	2	—	47
SANTA CRUZ COUNTY	20	—	—	—	20
Nogales	N/R	N/R	N/R	N/R	N/R
Patagonia	1	—	—	—	1
Uninc. Santa Cruz Co.	19	—	—	—	19
YAVAPAI COUNTY	190	2	1	2	214
Chino Valley	14	—	—	—	14
Clarkdale	1	—	—	—	1
Cottonwood	4	—	—	—	4
Jerome	—	—	—	—	—
Prescott	16	—	—	1	26
Uninc. Yavapai Co.	108	—	—	1	115
Prescott Valley**	47	2	1	—	54
YUMA COUNTY	84	1	4	1	108
Parker	—	—	—	—	—
Somerton	—	—	—	—	—
Uninc. Yuma Co.	58	1	—	—	60
Wellton	—	—	—	—	—
Yuma	26	—	4	1	48
TOTAL, Maricopa Co., September, 1980	1,631	12	11	36	2,842
TOTAL, Maricopa Co., September, 1979	1,362	5	18	52	2,639
PERCENT CHANGE	20	140	-39	-31	8
TOTAL, Arizona, September, 1980	3,076	30	21	52	4,539
TOTAL, Arizona, September, 1979	2,936	25	26	67	5,173
PERCENT CHANGE	5	20	-19	-22	-12

N/R: No report; data for this month will be combined with data reported for the following month.

Maricopa County Retail Food Prices

OCTOBER, 1980

Retail food prices in Maricopa County rose 0.3 percent in October; this gain follows a 1.9 percent increase in September.

The food price survey is compiled by the Bureau of Business and Economic Research, College of Business Administration, Arizona State University. Cosponsor of the study is Valley National Bank. The October index of 250.2 indicates that shoppers would now have to pay $25.02 for a similar basket of foods that would have cost $10.00 in 1967. These foods could have been purchased for $22.50 one year ago. The October, 1980, index reflects an 11.2 percent increase over the October, 1979, value.

The slight increase in the October index was due to increases in *Dairy Products* (1.6 percent), *Cereals and Bakery Products* (1.3 percent), and *Other Foods* (0.4 percent). Offsetting these gains was a drop in *Fruits and Vegetables* (-1.4 percent), while *Meats, Poultry, Fish, and Eggs* remained unchanged.

Prices of almost all items in the *Dairy Products* subgroup were up this month. Fresh milk and cream rose 2.6 percent, followed by cheese (2.2 percent), and ice cream and related products (2.2 percent). Prices also climbed in most categories in *Cereals and Bakery Products:* fresh biscuits, rolls, and muffins increased 4.6 percent, flour and prepared flour mixes 3.3 percent, and white bread 2.0 percent.

Price changes in *Other Foods* were mixed, resulting in only a small overall increase. Falling prices for coffee beans were reflected in decreased prices for roasted coffee (-6.1 percent), as well as freeze-dried and instant coffee (-2.7 percent). These reductions were counteracted by advancing prices for nuts, potato chips, and other snacks (5.7 percent) and sugar and artificial sweeteners (3.4 percent).

Sharp declines in apples (-36.0 percent), bananas (-11.1 percent), and potatoes (-5.2 percent) partially accounted for the lowered index value for *Fruits and Vegetables*. These decreases were matched by hikes in tomatoes (10.9 percent) and oranges (7.7 percent).

Although the overall index for *Meats, Poultry, Fish, and Eggs* remained unchanged during October, several minor changes occurred in various categories. Most pork prices were up, notably canned and noncanned ham (4.0 percent and 4.8 percent respectively). Also rising were prices for lunchmeat (5.0 percent), fresh and frozen fish and shellfish (4.3 percent), and frankfurters (2.4 percent). These increases were equally offset by decreases in fresh whole chicken prices (-3.4 percent), followed by sirloin steak (-2.6 percent), bacon (-1.9 percent), and ground beef other than canned (-1.5 percent).

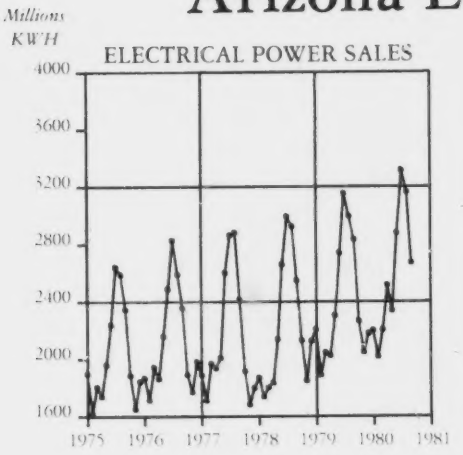
A comparison of July *Food Consumed at Home* for Maricopa County with index values for four selected metropolitan areas reveals that the outlays required to purchase a food group in July, 1980, (obtainable for $10.00 at 1967 average prices) were $24.10 in Maricopa County, $24.87 in Los Angeles-Long Beach, $25.20 in San Francisco-Oakland, $25.32 in Chicago-Northwestern Indiana, and averaged $25.15 in the United States.

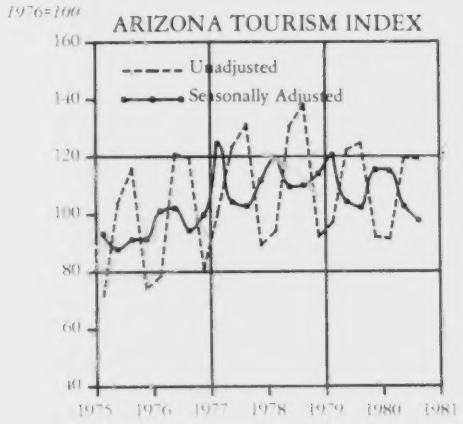
INDEX FOR FOOD CONSUMED AT HOME
(Average 1967 = 100 percent)

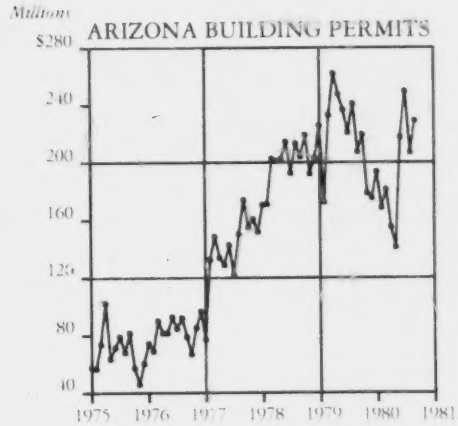
Group	*Maricopa County Sept. '80*[a]	*Maricopa County June '80*[b]	*United States[*] June '80*	*Los Angeles Long Beach[*] June '80*	*San Francisco-Oakland[*] June '80*	*Chicago Northwestern Indiana[*] June '80*
Food Consumed at Home	250.2	241.0	251.5	248.7	252.0	253.2
Cereals and Bakery Products	234.6	230.3	247.8	255.4	255.1	255.7
Meats, Poultry, Fish, and Eggs	258.3	244.0	236.7	239.0	247.2	243.2
Dairy Products	217.1	213.0	228.6	221.3	221.3	225.1
Fruits and Vegetables	236.6	225.0	253.9	231.7	235.1	256.1
Other Foods Consumed at Home	276.8	269.4	304.3	300.4	310.0	304.8

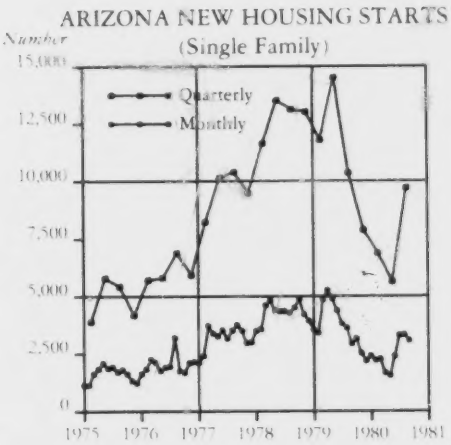
[*]Computed from data contained in *The Consumer Price Index*, U.S. Department of Labor, Bureau of Labor Statistics, Washington D.C.
[a]Maricopa County food prices are reported for the month closest to publication.
[b]Comparisons of food prices among various cities and the United States average are made on the basis of earlier months because of the lag in collecting price reports from these other areas.
Note: Index comparisons between Maricopa County and the other regions show only that food prices in Maricopa County have increased more or less than food prices in the other regions since 1967. The indexes cannot be used to determine the actual differences in food price levels between the regions.
Source: Bureau of Business and Economic Research, College of Business Administration, Arizona State University, in cooperative cosponsorship with Valley National Bank.

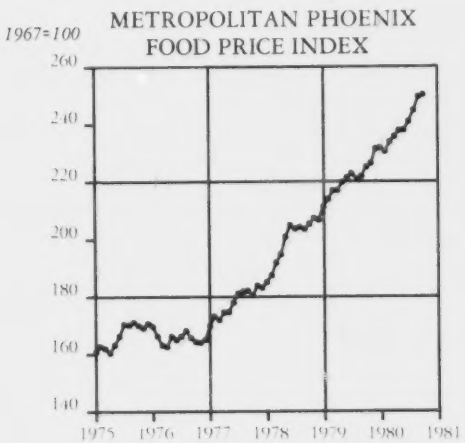
Arizona Economic Indicators

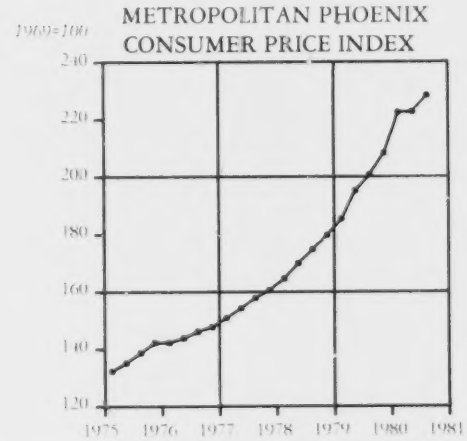












Source: All data compiled by the Bureau of Business and Economic Research, College of Business Administration, Arizona State University.